

ASBESTOS SURVEY REPORT

Quincy Mining Company Smelter Works

48991 Maple Street
Franklin Township, Michigan
ATC Project Number 19.27187.0401

Prepared for:

Mr. Eric Bowman
Environmental Quality Management, Inc.
1800 Carillon Blvd.
Cincinnati, Ohio 45240

June, 2004

June 15, 2004

Mr. Eric Bowman
Environmental Quality Management, Inc.
1800 Carillon Blvd.
Cincinnati, Ohio 45240

Re: Asbestos Survey Report
Quincy Smelter Facility
48991 Maple Street
Franklin Township, Michigan
ATC Project Number: 19.27187.0401

Dear Mr. Bowman:

ATC Associates Inc. (ATC) is pleased to submit the attached Asbestos Investigation Report conducted at the above-referenced site. This report includes the procedures and methodologies, analytical laboratory results and any applicable conclusions and recommendations.

ATC appreciates the opportunity to perform these services for Environmental Quality Management, Inc. and we look forward to working with you in the future. If you have questions or comments regarding the information in this report or if we can be of further assistance please do not hesitate to contact the ATC Novi, Michigan office at (248) 669-5140.

Sincerely,

ATC Associates Inc.

Michael Hauswirth

Project Manager

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ASBESTOS SURVEY REPORT

Quincy Smelter Facility
48991 Maple Street
Franklin Township, Michigan
ATC Project Number: 19.28187.0401

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this project was to conduct an asbestos investigation at the above-referenced facility. ATC provided the services as outlined below:

Conduct a baseline asbestos survey of the buildings designated as Quincy Smelter Facility located at 48991 Maple Street in Franklin Township, Michigan, which includes the following:

1. Survey the site buildings.
2. Identify accessible suspect asbestos-containing materials (ACMs).
3. Collect and analyze bulk samples of suspect friable and non-friable materials to eliminate suspect materials as asbestos containing.
4. Quantify ACMs, and location.
5. Assess current condition and Potential for Disturbance for asbestos-containing building materials
6. Inspect production equipment for asbestos-containing materials where accessible.

2.0 GENERAL SITE CONDITIONS

The asbestos survey was conducted at the Quincy Smelter Facility located at 48991 Maple Street in Franklin Township, Michigan, hereinafter referred to as the site. The survey was conducted by ATC representatives Sean Miller, Ryan Stubbs, and Michael Hauswirth, State of Michigan certified Asbestos Building Inspectors.

The facility site is located less than a quarter mile east of the Houghton-Hancock lift bridge on Rt. M-26 on the north side of Portage Lake. It was one of five copper smelters that operated on the Keweenaw peninsula during the late nineteenth and early twentieth centuries. The structures were originally constructed between approximately 1898 and 1919 with various additions to the

buildings at different times. The smelting operations began at the site in 1898 and ended in 1965. Some buildings were utilized for various uses periodically up until 1986. Currently the site consists of 27 buildings in various stages of deterioration. Photographs of identified asbestos-containing materials are provided in Appendix C. Please refer to Appendix D, for the Building Floor Plans.

3.0 BASELINE ASBESTOS-CONTAINING MATERIAL SURVEY

An asbestos survey was conducted for the twenty-seven buildings located at the Quincy Smelter site located at 48991 Maple Street Road in Franklin Township, Michigan. The asbestos survey was performed by ATC representatives Sean Miller, Ryan Stubbs and Michael Hauswirth, State of Michigan licensed Asbestos Building Inspectors (License #s 27169, 26546 and 10597, respectively) on June 7 through June 9, 2004. Inspector accreditations are included in Appendix A.

There were no previous asbestos survey reports or asbestos abatement documents available for review by ATC personnel prior to starting the asbestos inspection.

The site was visually inspected for the presence of building materials that are suspected to contain asbestos. Bulk samples of identified suspect ACM were collected and placed into individual containers for transport to a National Voluntary Lab Accreditation Program (NVLAP)/American Industrial Hygiene Association (AIHA) AIHA-accredited laboratory for analysis. Materials visibly identified as non-asbestos (fibrous glass, foam rubber, wood, etc.) were not sampled. The asbestos investigation consisted of four phases: 1) conduct a visual inspection of the site; 2) identification of homogeneous areas of suspect surfacing, thermal system insulation, and miscellaneous materials; and 3) sampling of accessible, friable and non-friable suspect materials, and, 4) assessment of the current condition and potential for disturbance of the asbestos-containing materials identified.

3.1

Homogeneous Areas and Functional Spaces

Prior to collecting any samples, homogeneous areas (HAs) were identified and listed to develop a sampling strategy. A homogeneous sampling area can be described as one or more areas of material that are similar in appearance and texture and that have the same installation date and function. The actual number of samples collected from each homogeneous sampling area may vary, based on the type of material and the professional judgment of the inspector.

3.2 Hazard Assessment Factors

3.2.1

From:

From the list of suspect homogeneous materials, a physical assessment was performed for each material on the list. A physical assessment includes evaluating the condition, assessing the potential for disturbance, and determining the friability of each material. Friability is a term used to describe the ease in which a building material inherently lends itself to disturbance. By definition, "friable" materials are those that can be crumbled or reduced to powder by hand pressure when dry. Each material on the list was further classified into one of three categories, which have specific sampling requirements for each category.

3.2.2

3.2.2.1

From:

Surfacing Materials: Refers to spray-applied or troweled surfaces such as plaster ceilings and walls, fireproofing, textured paints, textured plasters and spray-applied acoustical surfaces.

Thermal System Insulation: Refers to insulation used to inhibit heat gain or loss on pipes, boilers, tanks, ducts, and various other building components.

Miscellaneous Materials: Refers to friable and non-friable products and materials that do not fit in any of the above two categories such as resilient floor covering, baseboards, mastics, adhesives, roofing material, caulking, glazing and siding. This category also contains wallboard and ceiling tile.

3.3 Sampling Strategy

The asbestos inspection was conducted according to AHERA guidelines using a minimum number of samples collected from each HA, which also meets the sampling requirement found in 29 CFR 1926.1101.

Sample collection depends on the category that the HA falls into and the amount of material present, as follows:

AHERA GUIDELINES FOR DETERMINING THE NUMBER OF SAMPLES TO TAKE		
HA CATEGORY	HA SIZE	SAMPLES REQUIRED
Surfacing Materials	<1,000 SQ.FT.	3
	1,000-5,000 SQ.FT.	5
	>5,000 SQ.FT.	7 or more
Thermal System Insulation	No Stipulation	3+ (Must also sample all repair patches)
Miscellaneous Materials	No Stipulation	Per AHERA, these materials must be sampled "in a manner sufficient to determine whether or not they contain asbestos" typically 1-3 samples based upon inspector judgement.

If the analytical results indicated that all the samples collected per HA did not contain asbestos, then the HA (material) would be considered a non-ACM. However, if the analytical results of one or more of the samples collected per HA indicate that asbestos is present in quantities of greater than 1 percent asbestos by weight (as defined by EPA), all of the HA (material) would be treated as an ACM regardless of any other analytical results. Materials that can be visually determined to be non-asbestos (i.e., fibrous glass, foam rubber, etc.) by the licensed inspector do not require sampling and analysis.

Miscellaneous materials require adequately representative sampling, which is typically done by collecting from one to three samples per material. Inspectors typically rely on other investigation observations such as the condition, friability, and quantity of material to determine what would be a sufficient amount of samples to accurately evaluate the presence or absence of asbestos content.

Actual collection of a bulk asbestos sample involves physically removing a small piece of material and placing it in a marked, airtight container. Sample containers are marked with a unique identification number, which is also noted in the field notes.

3.4 Suspect Asbestos-Containing Material

Three hundred and seventy-seven (377) samples of suspect ACMs were collected and two hundred and seventy (270) Polarized Light Microscopy (PLM) analyses were performed.

The sample analysis was stopped based on the first positive finding per HA. The following tables present the sample analysis results. The **confirmed ACMs** are reported in **bold text**. Note that photographs of confirmed ACMs are provided in Appendix C. Building floor plans indicating sample locations are included in Appendix D.

**QUINCY SMELTER
BLDG. # 1
ICE HOUSE**

Building 1. – Ice House

The wood frame 600 SF Ice House was constructed in 1899 and was used to store ice, probably for the comfort of workers during the summer months. The Ice House is in extremely poor condition and is likely to collapse. The structure is not in its original location today. No suspect asbestos-containing materials were observed at the time of inspection.

**QUINCY SMELTER
BLDG. # 2.
WAREHOUSE**

Building 2- Warehouse

The 4,000 SF Warehouse Building was one of the first wood frame structures constructed in 1898. The building has a second floor loft area above the main floor and a changing room for workers was added in 1916 locker areas on the south side of the second floor. The Warehouse is in good condition except for the roof on the east side of the building which is collapsed leaving that portion of the building exposed to the elements.

A total of 43 samples of suspect asbestos containing materials were collected and analyzed for asbestos content. These samples include pipe insulation, firebrick, debris, plaster, tar paper, electrical wire and belt material. The analytical results can be found in the following table.

TABLE 1 QUINCY SMELTER BLDG. 2 WAREHOUSE				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
2-01A, B, C	Pipe Insulation	Main Floor-220 LF	Yes	44%Chrysotile
2-02A, B, C	White material in crate	Main Floor-NE corner- 100 SF	Yes	ND
2-03A, B, C	Tar paper	Main Floor-300 SF	No	ND
2-04A, B, C	Firebrick in kettle	Main Floor SW corner- 75 SF	No	ND
2-05A, B, C	Electrical wire wrap	Throughout-200 LF	No	*****
2-06A	Pipe Insulation (in crates)	Loft Area-300 LF	Yes	31%Chrysotile
2-07A, B, C	Vermiculite debris	Loft Area - 5 SF	No	ND
2-08A, B, C	12" Conveyer Belt	Loft Area - 75 LF	No	ND
2-09A, B, C	Dk. Brown Firebrick (in boxes)	Main Floor East End - 1000 SF	No	ND
2-10A, B, C	Lt. Tan Firebrick (on pallets)	Main Plant East End - 100 SF	No	ND
2-11A, B, C	Plaster	Changing Area -3000 SF	No	ND
2-12A, B, C	Baseboard Seam	Changing Area - 10 SF	Yes	20%Chrysotile
2-13A, B, C	Heat Shield	Main Floor NW corner machine fuse box -1 SF	No	67%Chrysotile
2-14 A, B, C	Fuse Box Insulation	Main Floor NW corner machine - 10 SF	No	5%Chrysotile
2-15A, B, C	Transite Panel	Main Floor NW corner machine- 2 SF	No	19%Chrysotile

Notes:

1. "ND" denotes no asbestos detected.
2. ** Samples not submitted to lab.

**QUINCY SMELTER
BLDG. # 3.
LABORATORY**

Building 3- Laboratory

The laboratory is a wooden structure constructed in 1898 with an addition made in 1908-1909 and has a small basement. The building was used for a variety of testing procedures to monitor the smelting process, determine the appropriate treatment of the ore shipments, and quality control of the final product.

A total of 51 samples of suspect asbestos containing materials were collected for analysis. These samples included pipe insulation, flooring, plaster, debris, electrical wire wrap, stack insulation, lab apparatus and exterior materials. The results of the laboratory analysis are listed in the following table.

SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
3-01A, B, C	Heat Shield	Side Shed SW corner- 10 SF	Yes	80% Chrysotile
3-02A, B, C	Brown exterior wrap	Exterior of Bldg.- 2000 SF	Yes	ND
3-03A, B, C	Tar sheathing	Exterior around addition- 100 SF	No	ND
3-04A, B, C	Roof tar	Exterior of addition- 100 SF	No	29% Chrysotile
3-05A, B, C	Stack block insulation	West side of Bldg.-20 SF	Yes	5% Chrysotile
3-06A, B, C	3" conveyer belt	50 LF	No	ND
3-07A, B, C	Plaster	Center lab area-1000 SF	No	6% Chrysotile
3-08A, B, C	Floor sheeting	Center lab area-120 SF	No	ND
3-09A, B, C	Electrical wire wrap	Throughout -200 LF	No	ND
3-10A, B, C	Pipe insulation	Basement-60 LF	Yes	44% Chrysotile
3-11A, B, C	White insulation (in boxes)	Basement-75 SF	No	ND
3-12A, B, C	Laboratory cups	Basement- 100	No	ND
3-13A, B, C	Vermiculite	NW room on floor- 100 SF	No	ND
3-14 A, B, C	Debris by north door	By north door- 1 SF	Yes	80% Chrysotile
3-15A, B, C	Heat Shield(thin)	NW room on east wall- 5 SF	Yes	67% Chrysotile
3-16A, B, C	Laboratory apparatus	NW room on table-5 SF	No	ND
3-17A, B, C	Transite Panel	Exterior-W side by door to basement- 3 SF	No	40% Chrysotile

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 4
CHARCOAL HOUSE**

Building 4- Charcoal House

The Charcoal House is a 1200 SF building constructed with wood and sandstone rebuilt in 1908. The interior and roof of the building burned in the 1980's and are collapsed inward. No suspect asbestos samples were observed during the inspection.

**QUINCY SMELTER
BLDG. # 5.
CASTING PLANT**

Building 5- Casting Plant

The casting shed was added to the east side of the No. 5 furnace building (Bldg. 6) in 1920. The building is a post and beam structure with a monitor roof and corrugated metal sides. The building is in an advanced stage of deterioration with a large area of the metal roof collapsed and most of the windows missing leaving the interior exposed to the elements.

A total of 36 samples of suspect asbestos containing materials were collected for analysis. These samples represent pipe insulation, gaskets, belts, firebrick, fabric and debris. The results of the laboratory analytical are presented in the following table.

TABLE 3 QUINCY SMELTER BLDG. 5-CASTING PLANT				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
5-01A, B, C	Pipe wrap	NE side on floor-8 LF	No	ND
5-02A, B, C	24" conveyer belt	NE side on floor-100LF	No	ND
5-03A, B, C	Gasket	NE side on floor-10 SF	No	25%Chrysotile
5-04A, B, C	Cement-like material	Middle of N. wall in bucket-75 SF	No	ND
5-05A, B, C	Hard material	Middle of N. wall in steel bucket-75 SF	No	ND
5-06A, B, C	Mortar	Middle of N. wall in bucket- 30 SF	No	ND
5-07A, B, C	Transite panel	NE side on floor- 1 SF	No	33%Chrysotile
5-08A, B, C	Curtain	Center of area-20 SF	No	ND
5-09A, B, C	Fabric	NE side on floor- 2 SF	No	80%Chrysotile
5-10A, B, C	Firebrick (light)	Along N. wall on pallet- 80 SF	No	ND
5-11A, B, C	Firebrick (dark)	NE corner- 150 SF	No	ND
5-12A, B, C	Debris	On floor along S. wall- 20 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 6
No. 5 REVERBERATORY FURNACE BLDG.**

Building 6- No. 5 Reverberatory Furnace Building

This 4000 SF building sits between Bldgs.5 & 7 and was built in 1904 to house an additional larger furnace that could produce more volume during the smelting process. The building is in advanced deterioration with the metal roof being loose and ready to collapse. Remnants of the furnace remain but are unstable.

A total of 33 samples of suspect asbestos containing materials were collected and submitted for analysis. These samples represent pipe insulation, firebrick, duct wrap, tar paper, heat shield and wire wrap. The laboratory analytical results are listed in the following table.

TABLE 4 QUINCY SMELTER BLDG. 6-NO. 5 REVERBERATORY FURNACE BLDG.				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
6-01A, B, C	Pipe Insulation (aircell)	NE side on floor-20 LF	Yes	67%Chrysotile
6-02A, B, C	Pipe insulation (mag)	Along N. wall-30 LF	Yes	50%Chrysotile
6-03A, B, C	Firebrick (light)	Furnace-1500 SF	No	ND
6-04A, B, C	Duct wrap	W. end on metal duct- 20SF	Yes	67%Chrysotile
6-05A, B, C	Heat Shield	N.wall-5SF	No	3%Chrysotile
6-06A, B, C	Fire Hose	N. area middle on floor- 25 LF	No	ND
6-07A, B, C	Firebrick (dark)	Furnace-1500 SF	No	ND
6-08A, B, C	Tar paper	At entrance to Bldg. 7- 200SF	No	ND
6-09A, B, C	Coil wrap	Machine SE side- 25 SF	Yes	67%Chrysotile
6-10A, B, C	Wire wrap	Machine center of plant- 15 SF	No	ND
6-11A, B, C	Electrical wire wrap	Machine center of plant- 15 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 7
REVERBERATORY FURNACE BLDG.**

Building 7- Reverberatory Furnace Bldg.

The building is a two-story 12,096 SF sandstone structure built in 1898 which held 4 of the original furnaces used in the smelting process. Of the 4 furnaces, only 1 remains and is in poor condition and is unstable. The corrugated metal roof and siding is loose and ready to collapse exposing the interior to the elements.

A total of 27 samples of suspect asbestos containing materials were collected and submitted for analysis. These samples represent pipe insulation, plaster, conveyer belts, tar paper, firebrick, electrical wire wrap and debris. The analytical laboratory results are listed in the following table.

TABLE 5 QUINCY SMELTER BLDG. 7- REVERBATORY FURNACE BLDG.				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
7-01A, B, C	Pipe Insulation (aircell)	Middle of N. wall-30 LF	Yes	67%Chrysotile
7-02A, B, C	Electrical wire wrap	NW corner-20 SF	No	ND
7-03A, B, C	Conveyer belt	NW corner on ground- 50 LF	No	ND
7-04A, B, C	Tar paper	NW corner on ground- 30 SF	No	ND
7-05A, B, C	Plaster	N. wall over sandstone- 3500 SF	No	ND
7-06A, B, C	Debris from pipe insulation (mag)	NE corner under lift- 25 SF	Yes	67%Chrysotile
7-07A, B, C	Firebrick	Furnace-1500 SF	No	ND
7-08A, B, C	Brown hose on reel over copper wire	At entrance to Bldg. 6- 200LF	No	ND
7-09A, B, C	Fire hose	S. entrance door- 150 L SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 8
SCALE BUILDING**

Building 8- Scale Building

This is a one story wood frame gabled roof building with corrugated metal siding and roofing. An overhead garage door is located on the ends of the building. The building was used to weigh mineral arriving by trucks for smelting operations. No suspect asbestos containing materials were identified during the time of this inspection.

**QUINCY SMELTER
BLDG. # 9
COOPER SHOP**

Building 9- Cooper Shop

This building is a 1092 SF 1-1/2 story, wood frame building with a gabled corrugated metal roof on a stone foundation. The upper floor space is accessible for storage via a wall mounted ladder.

A total of 9 samples of suspect asbestos containing materials were collected and analyzed. These samples include furnace caulk, furnace coating and electrical wire wrap. The analytical results are presented in the following table.

TABLE 6 QUINCY SMELTER BLDG. 9- COOPER SHOP				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	DETECTABLE YES/NO	ASBESTOS CONTENT
9-01A, B, C	Furnace caulk	S. end on furnace- 5SF	No	ND
9-02A, B, C	Furnace coating	S. end on furnace- 10 SF	No	ND
9-03A, B, C	Electrical wire wrap	Main floor lights-25 LF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 10
LUMBER SHED**

Building 10- Lumber Shed

The lumber shed is a 600 SF wood frame building built in 1917 to store lumber for the carpenter shop. No suspect asbestos containing materials were identified at the time of the inspection.

**QUINCY SMELTER
BLDG. # 11
COOPER STOCK BLDG.**

Building 11- Cooper Stock Bldg.

This 1-1/2 story, wood frame, board and batten building was built in 1898 on a pored concrete foundation. It has a gabled corrugated metal roof.

A total of 27 samples of suspect asbestos containing materials were collected for analysis. These samples include pipe insulation, wrap on metal, gaskets, heat shield, hoses and material in bags. The laboratory analytical results are listed in the following table.

TABLE 7 QUINCY SMELTER BLDG. 11- COOPER STOCK BLDG.				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
11-01A, B, C	Pipe insulation	First & second floors, & exterior- 230 LF	Yes	44% Chrysotile
11-02A, B, C	White powder in bag	NW corner on floor- 15 SF	No	ND
11-03A, B, C	Wrap on metal rods	NW room on shelf-25 SF	No	ND
11-04A, B, C	Heat Shield	NW room on table-2SF	No	16% Chrysotile
11-05A, B, C	Gaskets	SW corner on table- 100 LF	Yes	67% Chrysotile
11-06A, B, C	5" conveyer belt	SW corner on floor-6 LF	No	ND
11-07A, B, C	Small hose	SW corner on floor-10 LF	Yes	25% Chrysotile
11-08A, B, C	Electrical tape	NW room-2 LF	No	ND
11-09A, B, C	Cloth material	E. end on table-2 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 12
MINERAL HOUSE**

Building 12- Mineral House

The two story 3800 SF sandstone building was constructed in 1904 and has a gabled slate roof. Rail access is on the east end of the upper level to allow railcars to dump stamped mineral materials into the storage bins on the lower level.

A total of 12 samples of suspect asbestos containing materials were collected for analysis. These materials include plaster, firebrick, tar paper and electrical wire wrap. The laboratory analytical results are listed in the following table.

TABLE 8 QUINCY SMELTER: BLDG 12- MINERAL HOUSE				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
12-01A, B, C	Plaster	Walls-3000 SF	No	ND
12-02A, B, C	Firebrick	First floor under bins- 200 SF	No	ND
12-03A, B, C	Tar paper	Second level-200 SF	No	ND
12-04A, B, C	Electrical wire wrap	Second level-50 LF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 13
LIMESTONE BLDG.**

Building 13- Limestone Bldg.

The 1100 SF 300 ton capacity wood limestone bins were constructed adjacent to the briquetting building (#14) in 1906. The bins were loaded from above via a tram line connected to the mineral building, and were discharged into tram cars by chutes at the bottom of the bins. The bins are intact, but are in poor condition. The bins still contain some limestone, which has poured out onto the ground due to deterioration of the bins and chutes.

A total of 3 samples of suspect asbestos containing materials were collected for analysis. These samples include tar paper. The laboratory analytical results are listed in the following table.

TABLE 9 QUINCY SMELTER, BLDG. 13- Limestone Bldg.				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
13-01A, B, C	Tar paper	SE side on top of limestone-50 SF	No	14% Chrysotile

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 14
BRIQUETTING PLANT**

Building 14- Briquetting Plant

The 1800 SF building is a three story concrete masonry structure with heavy timber columns and beams, a gabled roof and a large dormer on each side of the metal roof. The building is in an advance stage of deterioration with the roof collapsing inward and structural cracks in the concrete masonry.

A total of 18 samples of suspect asbestos containing materials were collected for analysis. These samples include pipe insulation, conveyer belt, firebrick, white powdery material and caulk material. The laboratory analytical results are listed in the following table.

TABLE 10 QUINCY SMELTER, BLDG. 14- BRIQUETTING PLANT				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
14-01A, B, C	Pipe insulation	Main floor-50 LF	Yes	50% Chrysotile
14-02A, B, C	Conveyer belt	Main floor-120 LF	No	ND
14-03A, B, C	White powder material	Upper floor in bins & main floor- 1000 SF	Yes	ND
14-04A, B, C	Firebrick (light)	NE section of main floor- 600 SF	No	ND
14-05A, B, C	White caulk material	NE section of main floor-500 SF	No	67% Chrysotile
14-06A, B, C	Firebrick (dark)	NE section of main floor- 100 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 15
CRUSHING PLANT**

Building 15- Crushing Plant

The crushing plant is a small three story, wood frame addition to the briquetting plant added in 1919-1920. The plant consists of a elaborate vertical conveyer, sizing, and crushing system used to crush silica brickbats to sand the furnaces.

A total of 15 samples of suspect asbestos containing materials were collected for analysis. These materials included block insulation, conveyer belt, electrical wire wrap and firebrick. The laboratory analytical results are listed in the following table.

TABLE II QUINCY SMELTER BLDG 15- CRUSHING PLANT				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
15-01A, B, C	Block insulation	Second level East wall- 5 SF	Yes	44% Chrysotile
15-02A, B, C	6" Conveyer belt	All floors-120 LF	No	ND
15-03A, B, C	Electrical wire wrap	Ground level-10 LF	No	ND
15-04A, B, C	Firebrick (light)	Second level- 100SF	No	ND
15-05A, B, C	Firebrick (dark)	Second level- 100 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 16
PUMP HOUSE**

Building 16- Pump House

The 1000 SF sandstone pump house is located in the NE wing of the Cupola Furnace Bldg and was constructed in 1906. The original wood roof was replaced after a fire in 1909 with a corrugated metal roof. The sandstone walls are in various stages of deterioration due to water damage and erosion of mortar joints.

A total of 21 samples of suspect asbestos containing materials were collected for analysis. These samples include pipe insulation, plaster, gaskets, electrical wire wrap, particle board and door wrap. The laboratory analytical results are listed in the following table.

TABLE 12 QUINCY SMELTER, BLDG. 16- PUMP HOUSE				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
16-01A, B, C	Pipe insulation	Main area, shed, & south exterior-225 LF	Yes	50% Chrysotile
16-02A, B, C	Plaster	Main area- 2000 SF	No	ND
16-03A, B, C	Gasket	NW pump- 20 SF	No	ND
16-04A, B, C	Gasket (gray)	NE corner on floor-5 SF	No	20%Chrysotile
16-05A, B, C	Electrical wire wrap	Shed- 5 LF	No	ND
16-06A, B, C	Particle board	Shed- 300 SF	No	ND
16-07A, B, C	Door wrap	Shed-30 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 17
CUPOLA FURNACE BLDG.**

Building 17- Cupola Furnace Bldg.

The cupola building is a three story sandstone structure constructed in 1898 with two prominent towers that rise above the gabled roof line. The roof of the structure has collapsed onto the upper floors resulting in unstable masonry, wooden timbers and large roof components. There is a small crawl space area under the engine room which is inaccessible due to water.

A total of 15 samples of suspect asbestos containing materials were collected for analysis. These samples included pipe insulation, valve insulation, plaster, firebrick and gasket. The laboratory analytical results are listed in the following table.

TABLE 13 QUINCY SMELTER BLDG. 17 CUPOLA FURNACE BLDG.				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
17-01A, B, C	Pipe insulation	North room- 200 LF	Yes	67% Chrysotile
17-02A, B, C	24" Valve insulation	North room- 50 SF	Yes	40%Chrysotile
17-03A, B, C	Plaster	North room- 2000 SF	No	ND
17-04A, B, C	Firebrick	South room along west wall- 500 SF	No	ND
17-05A, B, C	Gasket	South room machine- 5 SF	No	50%Chrysotile

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 18
BOILER HOUSE**

Building 18- Boiler House

The boiler house was an addition in 1905 on the west side of the cupola building. It houses an original boiler for power generation and consists of masonry walls and corrugated metal exterior.

A total of 13 samples of suspect asbestos containing materials were collected for analysis. These samples include pipe insulation, pipe joint insulation, firebrick and unidentified brown material. The laboratory analytical results are listed in the following table.

TABLE 14 QUINCY SMELTER BLDG. 18- BOILER HOUSE				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
18-01A, B, C	Pipe insulation	Boiler room- 500 LF	Yes	80% Chrysotile
18-02A, B, C	Pipe joint insulation	Boiler room- 30LF	Yes	40% Chrysotile
18-03A, B, C	Firebrick	Inside boiler- 2000 SF	No	ND
18-04A, B, C	Brown material	SW corner on beam- 15 SF	No	ND
18-01-002	Material in drum	Drum moved to Bldg 7	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 19
BADEN HAUSEN BOILER BLDG.**

Building 19- Baden Hausen Boiler Bldg.

This is a two story pored concrete building with exterior pilasters and a gabled, corrugated metal roof connect to the boiler house.

A total of 3 samples of suspect asbestos containing firebrick material were collected for analysis. Pipe insulation on top of the boiler was inaccessible during the time of the inspection and is assumed to be asbestos containing. The laboratory analytical results are listed in the following table.

TABLE 15 QUINCY SMELTER BLDG. 19-BADEN HAUSEN BOILER BLDG.				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	TESTABLE YES/NO	ASBESTOS CONTENT
19-01A, B, C	Firebrick	Inside boiler- 2000 SF	No	ND
*****	Pipe insulation	Top of boiler room 15LF	Yes	

Notes:

1. "ND" denotes no asbestos detected.
2. Material not accessible at time of inspection and is assumed to be asbestos containing.

**QUINCY SMELTER
BLDG. # 20
MACHINE SHOP**

Building 20- Machine Shop

This building is a concrete masonry single story with loft and saltbox style metal roof constructed in 1907.

A total of 12 samples of suspect asbestos containing materials were collected for analysis. These materials include electrical wire wrap, pipe insulation, conveyer belts and paper wrap. The laboratory analytical results are listed in the following table.

TABLE 16 QUINCY SMELTER BLDG-20-MACHINE SHOP				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	DETECTABLE YES/NO	ASBESTOS CONTENT
20-01A, B, C	Pipe insulation	Second floor loft- 50 LF	Yes	33% Chrysotile
20-02A, B, C	Electrical wire wrap	Second floor loft- 50 LF	No	ND
20-03A, B, C	Conveyer belt	Second floor loft- 100 LF	No	ND
20-04A, B, C	Paper	Second floor loft NE corner- 50 SF	Yes	31% Chrysotile

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 21
SCALE HOUSE**

Building 21- Scale House

This is a small wood frame building located on the north side of the mineral house.

A total of 6 samples of suspect asbestos containing materials were collected for analysis. These materials include fiberboard and floor covering. The laboratory analytical results are listed in the following table.

TABLE 17 QUINCY SMELTER BLDG. 21- SCALE HOUSE				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
21-01A, B, C	Fiberboard	Interior- 100 SF	No	ND
20-02A, B, C	Floor covering	Interior- 50 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG'S. 22, 23, & 24
UNKNOWN USES**

Buildings 22, 23, & 24- Unknown Use

Buildings 22 & 23 are small wood frame structures located on the north side of the property. No suspect asbestos containing materials were observed to be present at the time of the inspection.

Building 24 is a small sandstone building with a poured concrete floor. The building is empty except for a small box of white powder material in the SE corner. A total of 3 samples were collected for analysis. The laboratory analytical results are listed in the following table.

TABLE 18 QUINCY SMELTER BLDG. 24- UNKNOWN				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
24-01A, B, C	White powder	SE corner in box- 30 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 25
BARN**

Building 25- Barn

The building is a 1-1/2 story timber frame with a poured concrete foundation barn constructed in 1898. It has a corrugated metal roof with large double doors on the west side to accommodate horses and accessories.

A total of 12 samples of suspect asbestos containing materials were collected for analysis. These materials include pipe insulation, shingles, drywall and debris. The laboratory analytical results are listed in the following table.

TABLE 19 QUINCY SMELTER BLDG. 25- BARN				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
25-01A, B, C	Pipe insulation	North end of barn & exterior- 100 LF	Yes	13% Chrysotile
25-02A, B, C	Shingles	Stable- 50 SF	No	ND
25-03A, B, C	Drywall	Second floor-100 SF	Yes	ND
25-04A, B, C	Debris	Second floor-20 SF	Yes	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 26
GARAGE**

Building 26- Garage

The garage is a wooden frame structure located on the west end of the property next to the barn. The structure is leaning and ready to collapse.

A total of 3 samples of suspect asbestos containing particleboard was collected for analysis. The laboratory analytical results are listed in the following table.

TABLE 20 QUINCY SMELTER BLDG. 26- GARAGE				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
26-01A, B, C	Particleboard	North end along wall- 10 SF	Yes	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
BLDG. # 27
HOUSE**

Building 27- House

The two story house is located in the northwest corner of the property and sits in close proximity to highway M-26. It is currently used for offices and the interior was not accessible at the time of this inspection. The exterior of the building was sampled for suspect asbestos containing material.

A total of 12 samples were collected for analysis. These materials include siding, tar paper, window caulk and roof shingles.

TABLE 21 QUINCY SMELTER BLDG. 27- HOUSE				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	DETECTABLE YES/NO	ASBESTOS CONTENT
27-01A, B, C	Siding	Exterior- 3500 SF	No	33%Chrysotile
27-02A, B, C	Tar paper	Exterior under siding- 3500 SF	Yes	3%Chrysotile
27-03A, B, C	Window caulk	Exterior windows- 200 LF	No	ND
27-04A, B, C	Roof shingle	Roof- 1000 SF	No	ND

Notes:

1. "ND" denotes no asbestos detected.

**QUINCY SMELTER
PROPERTY
GROUND SAMPLES**

Property- Outside Debris

It is documented that the ground on which the entire smelting complex sits is fill. This means that the piece of land is man-made and not part of the original shoreline. The soil is therefore primarily a hard packed sand that was deposited in a southward progression from the original shoreline into the water over a 40 year period between 1860 and 1898 before Quincy acquired the land. At the surface this soil throughout the site is mixed with a considerable amount of waste and smelting process materials such as: finely crushed slag, coal, limestone, iron ore, and structural debris such as wood, mortar and firebrick. There are three slag piles on the subject property-north slag pile, east slag pile and the east shoreline slag pile with various amounts of debris.

A total of 108 samples of various suspect asbestos containing materials were collected from the ground outside of the buildings and slag piles. The laboratory analytical results are listed in the following table.

TABLE 22 QUINCY SMELTER, OUTSIDE SAMPLES				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
RR-01A, B, C	White brick material	10ft east of train- 24 SF	No	ND
RR-02A, B, C	White fibrous material	On train track 30 ft. east of train- 3 SF	Yes	50%Chrysotile
5-12-01A, B, C	Black tar paper	Between buildings 5 & 12- 1000 SF	No	ND
DP-01A, B, C	Off white fibrous material	Debris pile 35 ft east of building 5- 100 SF	Yes	ND
DP-02A, B, C	Tan brick material	Cast pour bucket east of debris pile- 30 SF	No	ND
5-01A, B, C	Pipe wrap (blue paint)	SE corner of building 5- 3.5 LF	No	ND
5-02A, B, C	White brick material	Casting pour buckets near SE corner of building 5- 169 SF	No	ND
7-01A, B, C	White fibrous material	SE corner of building 7- 3 SF	Yes	80%Chrysotile
16-01A, B, C	White fibrous material	SW corner of building 16 on ground-10 SF	Yes	18%Chrysotile
16-02A, B, C	Gray material	SW corner of building 16 on ground- 30 SF	Yes	67%Chrysotile
17-01A, B, C	Black tar paper	SE side of building 17 shed- 200 SF	No	ND
12-01A, B, C	White fiberboard-weather strips	NE of building 12	No	ND
12-02A, B, C	Pink fiberboard-weather strips	NE of building 12	No	ND
12-03A, B, C	Blue fiberboard-weather strips	NE of building 12	No	ND
12-04A, B, C	Yellow fiberboard-weather strips	NE of building 12	No	ND
12-05A, B, C	Brown fiberboard	NE of building 12	No	ND
12-06A, B, C	Wire wrap	NE of building 12	No	ND
12-07A, B, C	Gray powder pile	NE of building 12- W of fallen structure	No	ND
12-08A, B, C	White fiber material	NE of building 12- W of fallen structure	No	ND
12-09A, B, C	Brown firebrick	NE corner of building 12 (piled)	No	ND
12-10A, B, C	Light Brown firebrick	NE corner of building 12 (piled)	No	ND
RR-03A, B, C	Pipe insulation	40 ft. east of train on tracks- 40 SF	Yes	ND

Notes:

1. "ND" denotes no asbestos detected.

TABLE 22(cont.) QUINCY SMELTER: OUTSIDE SAMPLES				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
22-01 A, B, C	Black tar paper	NW corner of building 22- 580 SF	No	ND
SP-01 A, B, C	Black weathered belt	SE slag pile-N side of shelf 30 ft. N of slag	No	ND
SP-03 A, B, C	Gray cardboard material	SE slag pile W. end	No	ND
SP-04 A, B, C	Gray cardboard curve shape	SE slag pile S. slope	No	ND
TR-01 A, B, C	Dark gray paper material	N. of building 12 NE corner N. side of trail- 1 SF	No	ND
TR-02 A, B, C	Gray fibrous material	S of building 25 SE corner-2 SF	Yes	57%Chrysotile
15-01 A, B, C	Soil & Gray fibrous material	SW of corner of building 15-10 SF	Yes	44%Chrysotile
15-02 A, B, C	Soil & Gray fibrous material	SE corner of building 15- 10 SF	Yes	40%Chrysotile
15-03 A, B, C	Soil & Gray fibrous material	W side of building 15- 10 SF	Yes	67%Chrysotile
SP-02 A, B, C	White hose	SE slag pile W end	No	ND
SP-05A, B, C	Piece of blue belt	NW slag pile- SE corner by washout- 1 SF	No	66%Chrysotile
25-ext-01A, B, C	Green roof material	East of building 25	No	ND
DP-03 A, B, C	White powder material	Debris pile E of mineral house- N of rail- 50 SF	Yes	ND
DP-04 A, B, C	Tar paper	Debris pile E of mineral house N of rail- 200 SF	No	50%Chrysotile

Notes:

1. "ND" denotes no asbestos detected.

QUINCY SMELTER STEAM LOCOMOTIVE

Steam Locomotive

There is one steam locomotive and coal car on a short piece of railroad track on the north side of building 17.

A total of 6 samples of suspect asbestos containing materials were collected for analysis. These materials include pipe wrap and boiler brick. The laboratory analytical results are listed in the following table.

TABLE 23 QUINCY SMELTER STEAM LOCOMOTIVE				
SAMPLE NUMBER	MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL & QUANTITY	FRIABLE YES/NO	ASBESTOS CONTENT
Train-01 A, B, C	Pipe wrap	SE portion of engine- 5 SF	No	57% Chrysotile
Train-01 A, B, C	Boiler brick	Inside boiler wall	No	ND

Notes:

1. "ND" denotes no asbestos detected.

TABLE 24: ASBESTOS ASSESSMENT AND QUANTITIES					
ASBESTOS-CONTAINING MATERIALS					
MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL	CURRENT CONDITION	POTENTIAL FOR DISTURBANCE	FRIABLE YES/NO	QUANTITY (NESHAP CATEGORY)
Pipe insulation	Bldg's 2,3,6,7,11, 13,14,15,16,17, 18,19,20, & 25	1	5	Yes	2500 LF
Valve insulation	Bldg. 17	1	5	Yes	50 SF
Pipe joint insulation	Bldg. 18	1	5	Yes	30 LF
Transite Panel	Bldg's. 2,3,& 5	10	5	No	6 SF
Heat Shield (cloth)	Bldg.'s 2 & 3	10	5	Yes	11 SF
Heat Shield (hard)	Bldg.'s 6 & 11	8	5	No	7 SF
Stack block insulation	Bldg. 3	5	5	Yes	20 SF
Plaster	Bldg. 3	3	7	No	1000 SF
Debris	Bldg. 3	5	5	Yes	1 SF
Roof tar	Bldg. 3	9	5	No	100 SF
Gasket	Bldg.'s 5,11,12, & 17	8	5	No	120 SF
Fabric	Bldg. 5	2	5	No	2 SF
Duct wrap	Bldg. 6	7	5	Yes	20 SF
Coil wrap	Bldg. 6	2	5	Yes	25 SF

Notes for Table 24:

1. The numerical classification for current condition is from 1 to 10, with 1 being extremely poor condition and 10 being undamaged.
2. The numerical classification for potential for disturbance is from 1 to 10, with 1 being inaccessible and 10 having a high probability of disturbance.
3. "SF" denotes square feet, "LF" denotes linear feet.

TABLE 24: ASBESTOS ASSESSMENT AND QUANTITIES					
ASBESTOS-CONTAINING MATERIALS					
MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL	CURRENT CONDITION	POTENTIAL FOR DISTURBANCE	FRIABLE YES/NO	QUANTITY (NESHAP CATEGORY)
Small hose	Bldg. 11	10	5	Yes	10 LF
Tar paper	Bldg.'s 13 & 27, debris pile	8	5	Yes	3750 SF
Caulk material	Bldg. 14	5	5	No	500 SF
Paper on rolls	Bldg. 20	8	5	Yes	50 SF
Siding	Bldg. 27	7	3	No	3500 SF
White material on ground	Outside Bldg.'s 7&16, & Tracks	1	10	Yes	50 SF
Gray material on ground	Outside Bldg.'s 16,25, &15	1	10	Yes	65 SF
Pipe wrap	Locomotive	5	10	No	5 SF

Notes for Table 24:

1. The numerical classification for current condition is from 1 to 10, with 1 being extremely poor condition and 10 being undamaged.
2. The numerical classification for potential for disturbance is from 1 to 10, with 1 being inaccessible and 10 having a high probability of disturbance.
3. "SF" denotes square feet, "LF" denotes linear feet.

Additional ACMs may be present on site in inaccessible or concealed spaces. These spaces include, but are not limited to, pipe chases, spaces between wall/ceiling/floor/door cavities, interior of mechanical components such as interior ducts, furnaces, tanks etc. If future maintenance/renovation/demolition activities make these areas accessible, ATC recommends that a thorough assessment of these spaces be conducted at that time to identify and confirm the presence or absence of additional ACMs. Until then, all such unidentified materials should be treated as "Presumed Asbestos Containing Material (PACM)".

There may be gaskets and other suspect materials within the equipment at the site. Suspect materials encountered in equipment should be treated as asbestos containing until sampling and analysis prove otherwise.

3.5 Laboratory Analytical Results

Bulk samples were analyzed by ATC Associates Inc. located in New York City, New York, using PLM according to EPA method 600/R-93/116. ATC participates in the NVLAP, a quality assurance program for PLM, and is accredited by the National Institute of Standards and Technology (NIST). Any material that contains greater than 1 percent asbestos is considered an ACM and must be handled according OSHA, EPA, and applicable state and local regulations.

Copies of the laboratory analytical reports and corresponding chain-of-custody records are included in Appendix E. Results are reported in percent asbestos by volume and indicate the types of asbestos identified in each sample. Other common non-asbestos components may also be noted on the analytical reports. The laboratory accreditations are provided in Appendix F.

3.6 Abatement Cost Estimates

Cost estimates for the removal of confirmed ACMs have been prepared and are included in Appendix G. However, these cost estimates should not be construed as recommendations for removal of these ACMs. The estimates are based on the following:

- Abatement work is conducted by state of Michigan licensed abatement contractor under the monitoring of accredited personnel in accordance with NESHAP and MDPH Requirements.
- All the abatement work is bid as one project; the work may be done in phases.
- Replacement materials are not included in the removal cost.
- All utilities (water and electrical power) will be available at the facility.
- Demolition to locate the materials is not included in the cost estimate.
- Moving/Storage of furniture/fixtures is not included in the cost estimate.

ATC recommends that these cost estimates not be shared with potential bidders for the abatement work.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The results of the asbestos survey conducted between June 7 and June 9, 2004 at the Quincy Smelter facility located in Franklin Township, Michigan, indicate that all of the thermal system insulation (TSI) in and around the buildings does contain asbestos. In addition, other miscellaneous materials such as gaskets, hoses, transite panels, siding and tar paper were also found to contain asbestos. The TSI is in extremely poor condition due to exposure to the weather and the buildings deteriorated state. Most of the buildings have structural deterioration such as collapsed roofs and open windows exposing the TSI and other asbestos containing materials to snow, rain, and wind over a period of time. Exposure to the elements has deteriorated the ACM to an extremely poor condition inside and outside of the buildings and should be removed immediately. Any contaminated soil within and outside of the buildings will need to be disposed of as asbestos waste. In addition, it is recommended that access to the site and buildings should be restricted for safety and liability issues until clean up and removal activities are completed. The following tables indicate the ACMs and the management recommendation for the same. More detailed recommendations applicable to renovation and /or demolition activities are discussed in this section following the tables.

TABLE 25: ASBESTOS MANAGEMENT RECOMMENDATIONS Quincy Smelter 48991 Maple Street Franklin Township, Michigan					
MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL	CONDITION	FRIABLE YES/NO	QUANTITY (NESHAP CATEGORY)	RECOMMENDATIONS
Pipe insulation (TSI)	Bldg.'s 2,3,6,7,11,14,15,16, 17,18,19,20,25 & outside bldg.'s	Poor	Yes	2500 Linear ft.	Remove this material immediately in accordance with MDPH requirements
Valve insulation (TSI)	Bldg. 17	Poor	Yes	50 sq. ft.	Remove this material immediately in accordance with MDPH requirements
Pipe joint insulation (TSI)	Bldg. 18	Poor	Yes	30 Linear ft.	Remove this material immediately in accordance with MDPH requirements
Transite Panel (miscellaneous)	Bldg.'s 2,3,&5	Good	No	30 sq. ft.	Remove this material in accordance with MDPH requirements
Heat Shield (cloth) (TSI)	Bldg.'s 2&3	Good	Yes	6 sq. ft.	Remove this material in accordance with MDPH requirements.

TABLE 25: ASBESTOS MANAGEMENT RECOMMENDATIONS

Quincy Smelter
48991 Maple Street
Franklin Township, Michigan

MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL	CONDITION	FRIABLE YES/NO	QUANTITY (NESHAP CATEGORY)	RECOMMENDATIONS
Heat Shield (hard) (TSI)	Bldg.'s 6&11	Good	No	11 sq. ft.	Remove this material in accordance with MDPH requirements
Stack block insulation (TSI)	Bldg. 3	Fair	Yes	20 sq. ft.	Remove this material in accordance with MDPH requirements
Plaster (SM)	Bldg. 3	Poor	No	1000 sq. ft.	Remove this material immediately in accordance with MDPH requirements
Debris (TSI)	Bldg. 3	Poor	Yes	1 sq. ft.	Remove this material immediately in accordance with MDPH requirements
Roof tar (Miscellaneous)	Bldg. 3	Good	No	100 sq. ft.	Remove this material in accordance with MDPH requirements
Gasket (miscellaneous)	Bldg.'s 5,11,12,16&17	Fair	No	120 sq. ft.	Remove this material in accordance with MDPH requirements
Fabric (miscellaneous)	Bldg. 5	Fair	No	2 sq. ft.	Remove this material in accordance with MDPH requirements
Duct wrap (TSI)	Bldg. 6	Poor	Yes	20 sq. ft.	Remove this material immediately in accordance with MDPH requirements
Coil wrap (TSI)	Bldg. 6	Fair	Yes	25 sq. ft.	Remove this material in accordance with MDPH requirements
Small hose (miscellaneous)	Bldg. 11	Good	Yes	10 Linear ft.	Remove this material in accordance with MDPH requirements.
Tar paper (miscellaneous)	Bldg.'s 13,27 & debris pile	Good	Yes	3750 sq. ft.	Remove this material in accordance with MDPH requirements
Caulk material (miscellaneous)	Bldg. 14	Good	No	500 sq. ft.	Remove this material in accordance with MDPH requirements
Paper on rolls (TSI)	Bldg. 20	Good	Yes	50 sq. ft.	Remove this material in accordance with MDPH requirements
Siding (miscellaneous)	Bldg. 27	Fair	No	3500 sq. ft.	Remove this material in accordance with MDPH requirements
White material on ground (TSI)	Outside Bldg.'s 7,16, & tracks	Poor	Yes	50 sq. ft.	Clean up this material in accordance with MDPH requirements to minimize exposures

TABLE 25: ASBESTOS MANAGEMENT RECOMMENDATIONS

Quincy Smelter
48991 Maple Street
Franklin Township, Michigan

MATERIAL (CLASSIFICATION)	LOCATION OF MATERIAL	CONDITION	FRIABLE YES/NO	QUANTITY (NESHAP CATEGORY)	RECOMMENDATIONS
Gray material on ground (TSI)	Outside Bldg.'s 15,16,&25	Poor	Yes	65 sq. ft.	Clean up this material in accordance with MDPH requirements to minimize exposures
Pipe wrap (TSI)	Locomotive	Good	No	5 sq. ft.	Remove this material in accordance with MDPH requirements
"MDPH" indicates the Michigan Department of Public Health					

Subcontractors and employees working at the site should be made aware of the location of the ACMs identified in this report and of the possibility that concealed ACMs may be found during demolition. They should be advised not to disturb ACMs without owner approval.

The following recommendations should be followed for renovation/demolition projects including contracting the services of an environmental consultant to monitor/document that the renovation/demolition contractor activities comply with all OSHA, MDPH, and NESHAP requirements.

U.S.E.P.A. regulations require the removal of Regulated Asbestos-Containing Materials (RACM) prior to demolition activities. RACM is defined as (a) Friable asbestos material, (b) Category I non friable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation activities.

The Michigan Department of Public Health (MDPH) defines an "asbestos abatement project" as any activity involving persons working directly with the demolition, renovation, or encapsulation of friable asbestos materials.

Based upon these definitions, all identified ACMs will be required to be removed prior to renovation or demolition.

Except in the instance of exterior non-friable asbestos-containing materials, asbestos abatement can only be legally performed by a Michigan-licensed asbestos abatement contractor. The abatement contractor must comply with federal, state, and local regulations, including but not limited to:

1. OSHA Regulation 29 CFR 1926.1101 (Asbestos)
2. State of Michigan Department of Health Regulation concerning Asbestos Abatement
3. EPA Regulation 40 CFR Part 61 (NESHAPS)

5.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in the report are based only on conditions that were noted during the June 7 through June 9, 2004, asbestos inspection of the site buildings located at the Quincy Smelter facility in Franklin Township, Michigan.

Any conditions or materials that could not be visually identified on the surface were not inspected and may differ from those conditions or materials noted. It was not within the scope of the inspection to remove surface materials to investigate portions of the structure or materials that lay beneath the surface. ATC selection of sample locations and frequency of sampling was based on ATC observations and the assumption that like materials in the same area are homogeneous in content.

The report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. **Under no circumstances is the report to be utilized as a bidding document or as a project specification document since it does not have all the components required to serve as an Asbestos Project Design document or an Abatement Workplan.**

Our professional services have been performed, our findings obtained, and our conclusions and recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This statement is in lieu of other statements either expressed or implied. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

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