

## **Work Plan**

CERCLA Abandoned Asbestos Removal  
at  
Quincy Smelter Site  
Franklin Township, Houghton County, Michigan

EPA Contract No. 68-S5-03-06  
Task Order No. 0104

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DRAFT

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## SECTION 1

### INTRODUCTION

The Quincy Smelter Site is a former copper smelting facility that has not been operational since the early 1970's. Environmental Quality Management, Inc. (EQ) has performed several removal efforts under its Emergency Response and Remedial Services Contract (ERRS) with United State Environmental Protection Agency (U.S. EPA) since June of 2004. EQ has removed and disposed of abandoned chemicals, accessed and completed limited removal of asbestos, provided shoreline stabilization, and installed erosion control measures. The facility is in a state of disrepair due to lack of maintenance and climatic conditions. Roof damage and structural failure is prevalent throughout the facility primarily as a result of snow load, and freeze-thaw degradation of the masonry structures. The varying structural integrity of the buildings will strongly influence the removal tasks selected for this removal action to protect the health and safety of site workers. The historical significance of the facility, a National Historical Landmark, will also affect selected approaches.

The site consists of approximately 25 acres with 25 buildings located on the premises. The focus of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal action will be on the 13 buildings that contain asbestos containing materials (ACM). ACM is found in these buildings in friable and non friable forms. ACM is present in pipe wrap, gaskets, heat shield, block insulation, joint insulation, hose, and siding. The quantity of ACM in any one building requiring removal does not pose a significant challenge, however, access to the ACM in many of the buildings does. Structural integrity of buildings and furnishings, as well as debris accumulations, requires each location to be examined independently to overcome challenges associated with existing conditions.

The Quincy Smelter Site is located at 48991 Maple Street, Ripley, Michigan. The location of the site, with respect to the State of Michigan, is depicted in Figure 1 below.

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The location of the site, with respect to the Cities of Houghton and Hancock, are depicted below in Figure 2.

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Table 1 below summarizes information concerning the buildings requiring ACM removal.

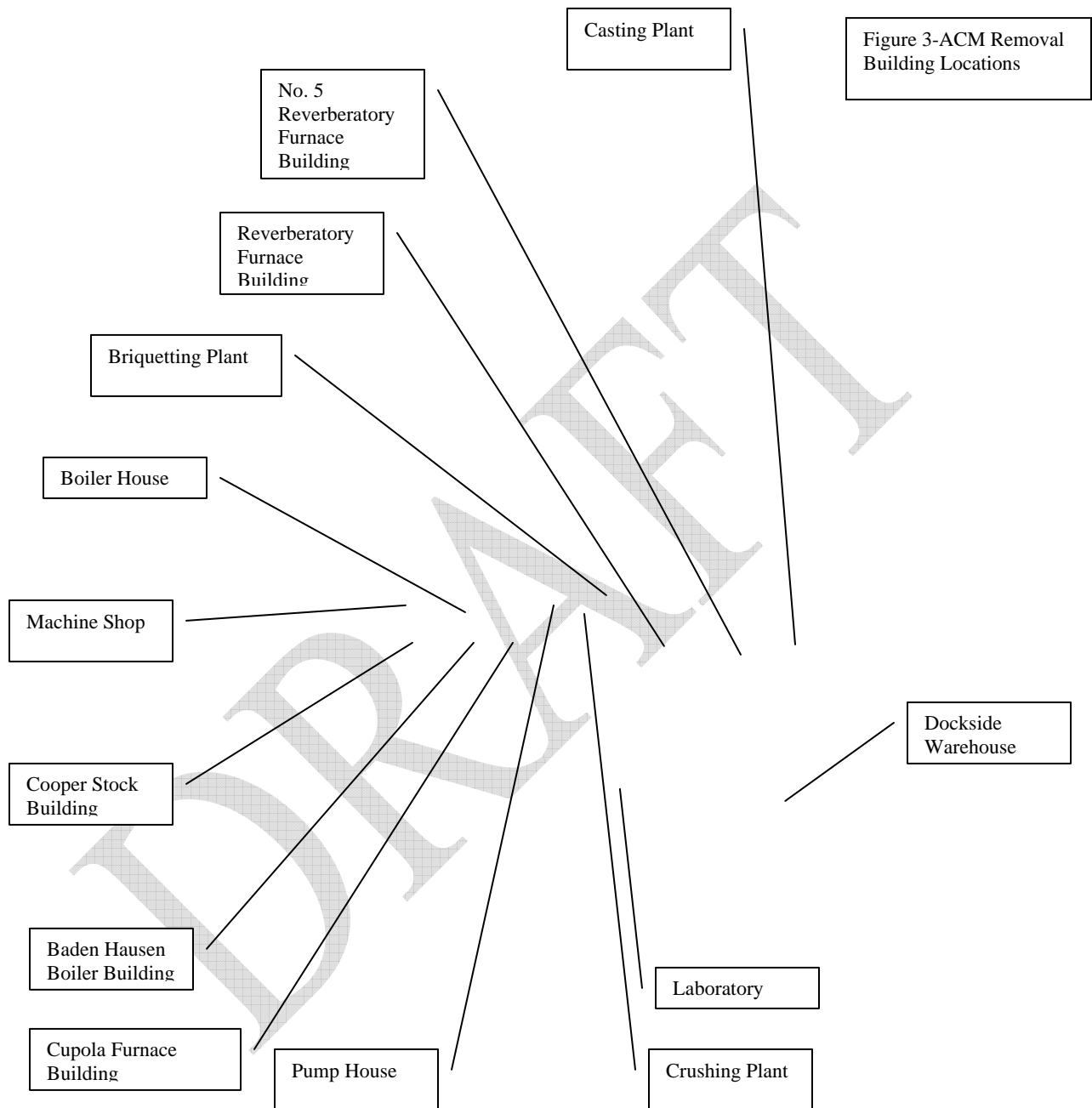
**Table 1- Asbestos Location Information Summary Table**

Building No.	Building Name	Location	ACM Type	Amount	Units	Friable
2	Dockside Warehouse	Main Floor	Pipe Insulation	220	LF	Yes
		Loft Area	Pipe Insulation in Crates	300	LF	Yes
		Changing Area	Baseboard Seam	10	SF	Yes
		Throughout Building	ACM Debris	1200	SF	Yes
		1 <sup>st</sup> & 2 <sup>nd</sup> Floor	Pipe Insulation	70	LF	Yes
		East side under Collapsed Roof	Drummed Pipe Insulation	100	SF	Yes
3	Laboratory	Site Shed Southwest Corner	Heat Shield	10	SF	Yes
		Basement	Pipe Insulation	60	LF	Yes
		By North Door	Debris by North Door	1	SF	Yes
		Northwest Room on East Wall	Heat Shield	5	SF	Yes
		West Side of Building	Stack Block Insulation	20	SF	Yes
		1 <sup>st</sup> and	Debris	250	SF	Yes

		Basement Floor				
5	Casting Plant	NE Side on Floor	Gasket	10	SF	No
		NE Side on Floor	Transite Panel	1	SF	No
		NE Side on Floor	Fabric	2	SF	No
6	No. 5 Reverberatory Furnace Building	NE Side on Floor	Pipe Insulation (aircell)	20	LF	Yes
		Along North Wall	Pipe Insulation (mag)	30	LF	Yes
		West End on Metal Duct	Duct Wrap	20	SF	Yes
		Machine on SW Side	Coil Wrap	25	SF	Yes
		Throughout Building	Debris	250	SF	Yes
7	Reverberatory Furnace Building	Middle of North Wall	Pipe Insulation (aircell)	30	LF	Yes
		NE Corner under Lift	Debris from Pipe Insulation	25	SF	Yes
		Under Piping	Debris	120	SF	Yes
11	Cooper Stock Building	1 <sup>st</sup> & 2 <sup>nd</sup> Floor and Exterior	Pipe Insulation-Bulk Storage	230	LF	Yes
		SW Corner on Table	Gaskets	100	LF	Yes
		SW Corner on Floor	Small Hose	10	LF	Yes
14	Briquetting Plant	Main Floor	Pipe Insulation	50	LF	Yes
		Under Piping	Debris	200	SF	Yes
15	Crushing Plant	Second Level East wall	Block Insulation	5	SF	Yes
16	Pump House	Main Area, Shed, and South Exterior	Pipe Insulation and Debris	225	LF	Yes
17	Cupola Furnace Building	North Room	Pipe Insulation (approx. 5 large fittings)	200	LF	Yes
		North Room	24" Valve Insulation	50	SF	Yes
		North Room	Debris	800	SF	Yes
18	Boiler House	Boiler Room	Pipe Insulation	500	LF	Yes
		Boiler Room	Pipe Joint Insulation	30	LF	Yes
		Boiler Room	Debris	800	SF	Yes
19	Baden Hausen Boiler Building	Top of Boiler Room	Pipe Insulation	15	LF	Yes
		Top of Boiler Room	Debris	300	SF	Yes
20	Machine Shop	Second Floor Loft	Pipe Insulation	50	LF	Yes

		2 <sup>nd</sup> Floor Loft NE Corner	Paper	50	SF	Yes
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Figure 3 depicts the location of the buildings described in Table 1.



### Applicable Relevant and Appropriate Requirements (ARARs)

The Clean Air Act (CAA) required the U.S. EPA to develop and enforce regulations to protect the public from exposure to airborne hazardous substances such as asbestos. U.S. EPA established the National Emissions Standards for Hazardous Air Pollutants (NESHAP) under authority of Section 112 of the CAA. NESHAP regulates specific work practices to be followed for demolition and renovations of all structures, installations, and buildings.

Asbestos is regulated by 3 state agencies in Michigan. The Michigan Department of Environmental Quality (MDEQ), through the Air Quality Division, has the authority to enforce NESHAP; the Michigan Department of Labor and Economic Growth (DELG), through the Construction Safety and Health Division, implements the Asbestos Abatement Contractors Act; and the Michigan Occupational Safety and Health Act (MIOSHA), the Asbestos Workers Accreditation Act, the MIOSHA Asbestos General Industry Standard, and the MIOSHA Construction Standard.

The work at Quincy Smelter Facility is the cleanup of abandoned asbestos. NESHAP regulations require an inspection of the facility to determine the presence of ACM, and to quantify the amount of ACM. U.S. EPA tasked EQ to inspect and quantify ACM at the facility in June of 2004. EQ subcontracted ATC Associates Inc. to conduct the inspection with their results reported June 15, 2004. A copy of this report (EPA asbestos survey report.pdf) is available for review by accessing [epaossc.net\\_list.asp?id=889](http://epaossc.net_list.asp?id=889). The EPA tasked Weston Solutions, Inc. to conduct an asbestos removal assessment. The report (34793.pdf) was completed in January of 2005 and is available for review at the same site described above. Table 1, describing the location of ACM, type and associated quantities was developed from these two reports.

NESHAP requires at least 1 trained supervisor to be present when ACM is stripped, disturbed, removed or otherwise handled. DLEG requires training for asbestos workers. EQ will provide at least 1 trained supervisor and a work crew trained for asbestos work.

The MDEQ's Waste and Hazardous Materials Division requires that all ACM removed be disposed at an approved Type II landfill in leak tight wrapping or containers. EQ will provide leak tight wrapping or containers, and waste will be disposed at a Type II landfill.

Michigan DEQ and DLEG's Notification of Intent to Renovate/Demolish requires a 10 day delay, a start and end date, and a 1% fee. National Contingency Plan, Section 300.400 (e) exempts this work from permits and permit equivalency processes.

### Historical Properties



The Western Lake Superior Area Contingency Plan provides for the activation of a Historic Properties Specialist (HPS) to advise the On-Scene Coordinator. The HPS for the site is the National Park Service.

#### Task Order Goals & Objectives

The Task Order Goals and Objectives are as follows based on discussions with the On-Scene Coordinator (OSC) and are listed below:

- EQ will remove ACM materials from its present locations either where it was installed, or where it was dislodged to floor and/or other surfaces. This will not include an extensive decontamination of the room/building/location to recover fiber/dust accumulations resultant from breakdown of ACM. EQ will clean/HEPA vacuum areas immediately adjacent to pre-removal ACM location.
- EQ will only remove/disturb/stabilize the debris/structure/furnishings necessary to permit safe access for site workers to perform ACM removal. This will minimize the impact to historical artifacts/structures/debris to preserve the historical nature of the site.
- The National Park Service, as the Historic Properties Specialist, will be consulted on identifying features of the structures, associated artifacts, and ACM removal alternatives designed to minimize impacts to the historic property.

## SECTION 2

### SCOPE OF WORK/OPERATIONAL APPROACH

EQ will address the Scope of Work (SOW) and Operational Approach on a building-by-building basis. EQ will include a schedule for completion in the following section presented in a logical order of completion. Changing site conditions with regard to instability of the “Reverberatory Furnace Stack” and the other building issues in general may change the order of execution as presented. Potential changing conditions will require flexibility in the schedule and removal tactics. The structural condition of the buildings and the amount of debris make it impractical to implement containment and decontamination measures such as negative air enclosures/isolation barriers. EQ will primarily rely on wetting with amended water, wrapping with plastic, and glove bagging to facilitate removal. Installing containment measures may not only damage the historical nature of the site, it could also risk damaging structural integrity of building and facilities such that site workers may be exposed to physical hazards.

#### Site Preparation Activities

EQ will complete the following activities in addition to the Structural Engineering Assessment:

- Prepare Work Plan describing ACM removal approach, provide schedule and cost estimate;
- Prepare Health and Safety Plan (HASP);
- Procure/arrange site resources; and
- Perform Structural Engineer Assessment of Reverberatory Furnace Stack.

EQ has procured UP Engineering to assess the current structural integrity of the Reverberatory Furnace Stack (RFS), and to provide a Structural Engineer to monitor the structural integrity of the stack during ACM removal operations. The intent of the assessment and monitoring is to assure that site workers are not put at risk from full or partial collapse of the stack. Changing wind conditions and operation of heavy equipment provide concern for destabilizing the structure. The Structural Engineer will also be responsible for providing the proper equipment and support services to inspect the RFS. The monitoring will include the Structural Engineers travel time/expense, and site time to monitor the RFS during periods when ACM removal crews are working within 200 feet of the RFS (as reported in the Weston Solutions Inc. report entitled “Revision 2 Quincy Smelter Asbestos Abatement Assessment” dated January 15, 2005, or at a distance determined by the current Structural Engineering Assessment ). The buildings within the 200’ radius include Building No. 2, 3, 5, 6, 7, 14, 15, 16, & 17. Note that all work described following this section is subject to a favorable assessment of the RFS.

#### Mobilization

EQ will provide an RM to oversee ACM removal from our Cincinnati, Ohio office. EQ's Team subcontractor, Veolia Environmental Services, will mobilize from their operations center. The team subcontractor will provide a mobile personnel asbestos decontamination trailer for personnel decontamination. EQ will provide a telescopic forklift, aerial man lift, and skid steer loader to assist with debris removal and ACM handling.

#### Site Management and Facilities

EQ will provide a small office trailer for site management, but will not provide electric and phone service due to the expected short duration of the project. EQ will supply a generator to power the office trailer and an asbestos decontamination trailer.

EQ will rely on the hotel used for lodging of the RM for facsimile and internet access.

Decontamination Station - EQ will construct one multi-chamber decontamination station for final personnel decontamination and PPE removal. EQ will treat each ACM building as individual hot zones/exclusion zones. All work performed in hot zones will be performed in Level C PPE. The crews will wear multiple outer coverall suits. The outermost suit will be vacuumed as exiting the build from the work assignment, and discarded into a trash container lined with ACM burial bag. The small quantities of ACM removal, and inability to seal the individual buildings due to poor structural condition, make it impractical to install multiple decontamination tunnels at the entrance of each building. Final personnel decontamination will take place at the station established between the machine shop and boiler building. Here personnel will decontaminate and disrobe PPE following standard ACM personnel decontamination procedures. Subsequent to PPE removal, personnel will exit the fenced exclusion zone and proceed to the Asbestos decontamination trailer for showering before departing from the site.

Asbestos Disposal Roll-Off Box - A 30 cubic-yard roll off box will be spotted in front of Building No. 10 Lumber Shed. Material will be shuttled from individual buildings on the forklift or skid steer loader, and placed in the box for disposal. The box will be kept covered with a tarp when not being loaded.

#### Building Number 2: Dockside Warehouse

The warehouse building is in good structural condition with the exception of the collapsed roof on the east side of the building. The structure has a main level and a second floor level that contains various ACM.

The ACM requiring removal is summarized in Table 2 below.

**Table 2- Building No. 2 Dockside Warehouse ACM Removal Summary**

Location	ACM Type	Amount	Units
Main Floor	Pipe Insulation	220	LF

Loft Area	Pipe Insulation in Crates	300	LF
Changing Area	Baseboard Seam	10	SF
Throughout Building	ACM Debris	1200	SF
1 <sup>st</sup> & 2 <sup>nd</sup> Floor	Pipe Insulation	70	LF
East side under Collapsed Roof	Drummed Pipe Insulation	100	SF

#### Main Floor:

ACM material on the main floor level is primarily pipe insulation located on piping, in drums under the collapsed roof debris, or in small debris accumulations on the floor beneath the piping runs. Access to the building will be made through a large doorway on the west side of the building. EQ will require a skid steer loader with both bucket and forks to move objects and debris to allow access for ACM removal. The skid steer loader can enter the building from the western door opening. ACM removal will take place as follows:

- Personnel will install a mobile decontamination station adjacent to the western door opening. This will consist of an asbestos vacuum for cleaning the exterior suit used in the building, as well as gloves, hood, and boots. A trash receptacle with ACM burial bag will be present to receive outer suit prior to worker exiting the work area. A table will be setup outside the tunnel for storage of additional PPE, first aid and support equipment. The station will be equipped with additional support equipment such as a 5 KW generator, hand tools, and fire extinguishers. Drums or a small poly tank will be utilized for water storage for ACM wetting and decontamination purposes. A clear plastic door flap will be used to provide an ACM migration barrier.
- Personnel will enter the building on the main floor to begin removal of small debris accumulations beneath piping runs prior to bringing in equipment to create access for removal of ACM covered piping. ACM debris accumulations will be wetted thoroughly with “amended water” prior to disturbing it to load it into ACM burial bags. ACM will be picked up and placed into burial bags by hand or with the aid of scoop shovel subject to quantity. Subsequent to debris removal an asbestos vacuum will be used to collect residual material from the floor surface 2 feet beyond the extent of the debris accumulation.
- The skid steer loader equipped with forks and/or bucket will relocate debris and/or furnishings to provide access to remove ACM pipe insulation. Debris and furnishing relocation will be limited to inside the building, and will only be sufficient to provide access for ACM removal. This will be the standard operating procedure throughout the ACM removal effort. This will also include relocating roof debris on the east side of the building to access drums containing ACM pipe wrap.
- ACM covered piping will be removed by glove bagging because of the less destructive nature of the removal technique. This will be accomplished by personnel using ladders and/or a manlift to access the piping. Personnel will wet the ACM with amended water dispensed from hand held sprayers prior to installing the glove bag and removing the ACM. Glove bags and ACM will be

- placed into ACM burial bags following removal. Asbestos labels will be affixed to the wrapped surface, and the material will be taken to the disposal roll off.
- The ACM pipe wrap in drums on the east side of the building will be double wrapped in 6-mil plastic sheeting. The plastic sheeting will be affixed to the drums with spray adhesive and duct tape to secure the sheeting in place and seal the seams. There are 6 drums that require removal and will be taken to the western door for transfer to the disposal roll off box.

#### Second Floor:

Personnel can access the second floor by two (2) stair cases on the western side of the building. The interior staircase provides access to the loft area, and an exterior staircase provides access to shower/changing room in the southwest corner of the building. ACM in the loft area is present either in small debris piles or in wooden crates, or drums. ACM removal on the second floor will take place as follows:

- Personnel will access the loft through the interior stair case on the west side of the main floor level. They will address debris accumulations on the floor in the same manner as described on the main level.
- Wooden crates and drums will be wrapped in 2 layers of plastic sheeting in similar fashion as the drums from the main level. The wooden crates and drums will need to be moved to the second floor opening with a pallet jack or appliance dollies due to their size. The removal of ACM containing crates and drums from the building will be through a material handling doorway on the west side of the building, and a telescopic forklift will be used to lower ACM to ground level. The ACM will be taken to the disposal rolloff after proper labels are affixed.
- The second floor locker room requires the removal of 50 SF of “Baseboard Seam/Trim” and 50 LF of pipe insulation. The pipe insulation will be glove bagged and removed. The base board seam will be wetted with amended water and placed in an asbestos burial bag. Glove bag/ACM pipe wrap, and base board seam will be doubled bagged in an asbestos burial bag before removal from the building. The areas immediately surrounding ACM removal will be vacuumed with an asbestos vacuum.
- The decontamination station will be transferred to Building 3. Equipment will be vacuumed with an asbestos vacuum before exiting the building and sprayed with amended water. PPE and spent materials will be double bagged in asbestos burial bags and transferred to the roll off box for disposal.

#### Building Number 3: Laboratory

The laboratory building is a single story wooden framed building with a concrete basement. ACM is present on the main level and in the basement. Table 3 summarizes information regarding quantity and location of the ACM.

**Table 3 -Building 3 Laboratory ACM Removal Summary**

Location	ACM Type	Amount	Units
Site Shed Southwest Corner	Heat Shield	10	SF
Basement	Pipe Insulation	60	LF
By North Door	Debris by North Door	1	SF
Northwest Room on East Wall	Heat Shield	5	SF
West Side of Building	Stack Block Insulation	20	SF
1 <sup>st</sup> and Basement Floor	Debris	250	SF

ACM removal will be addressed in the following manner:

- Personnel will install a mobile decontamination station adjacent to the door opening in a similar manner as Building 2.
- Personnel will enter the building on the main floor to begin removal of small debris accumulations beneath piping runs, and the heat shield prior to starting removal of ACM covered piping and the heat shield. ACM debris accumulations will be wetted and placed in burial bags. An asbestos vacuum will be used to collect residual material from the floor surface 2 feet beyond the extent of the debris accumulation.
- The heat shield in the SW corner of the building will be wetted and removed from the wall and placed in a burial bag. The area behind and below will be vacuumed with an asbestos vacuum following heat shield removal. \*NPS will photograph the heat shield prior to removal\*
- The 60 lineal feet of pipe insulation will be glove bagged and removed. Glove bag/ACM will be placed into double bagged ACM burial bag.
- The “Stack Block” insulation will require partial disassembly of the flue to gain access for removal. \*NPS will photograph the flue prior to disassembly\* Flue will be repaired or items stacked neatly next to it. The blocks will be wetted and dislodged from their installed location and placed in double ACM burial bags.
- The decontamination station will be transferred to Building 6 in the same manner it was transferred from Building 2 to Building 3.

**Building No 5: Casting Plant & Building No. 6: No. 5 Reverberatory Furnace Building**

Building No. 5 & 6 will be addressed concurrently and accessed through the large doorway on the south side of the building. Note that due to poor condition of roof and glass windows, no work should take place in buildings if winds are greater than 15 mph. The ACM requiring removal is summarized in Table 4 below:

**Table 4 -Building 5 & 6 Casting Plant & No.5 Reverberatory Furnace Building ACM Removal Summary**

Building	Location	ACM Type	Amount	Units
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Casting Plant	NE Side on Floor	Gasket	10	SF
	NE Side on Floor	Transite Panel	1	SF
	NE Side on Floor	Fabric	2	SF
No. 5 Reverberatory Furnace Building	NE Side on Floor	Pipe Insulation (aircell)	20	LF
	Along North Wall	Pipe Insulation (mag)	30	LF
	West End on Metal Duct	Duct Wrap	20	SF
	Machine on SW Side	Coil Wrap	25	SF
	Throughout Building	Debris	250	SF

ACM removal will be addressed in the following manner:

- Personnel will install a mobile decontamination station adjacent to the door opening in a similar manner as Building 2.
- Personnel will enter the building on the main floor to begin removal of small debris accumulations beneath piping runs prior to starting removal of ACM covered piping and the heat shield. ACM debris accumulations will be wetted and placed in burial bags. An asbestos vacuum will be used to collect residual material from the floor surface 2 feet beyond the extent of the debris accumulation. The gasket, transite panel, and fabric in the casting plant will be wetted, picked up, and placed in a burial bag. The areas beneath these materials will be vacuumed with an asbestos vacuum.
- The skid steer loader with forks and/or bucket will be brought in to move debris and furnishings to create access for ACM pipe and duct wrap removal. An articulating manlift will be used to access ACM covered piping for ACM removal by glove bagging technique. Whenever workers are performing elevated work, fall protection equipment will be used in compliance with OSHA regulations throughout the project. The duct wrap will be wetted, dislodged and bagged in ACM burial bags. The duct will be vacuumed where ACM was formerly present.
- The coil wrap on the machine on the southwest side of the building will be wetted, dislodged and bagged in ACM burial bag. The area where the coil wrap was present will be vacuumed subsequent to ACM removal.
- Removed ACM material will be placed in a second ACM burial bag, and proper labels will be affixed. Material will then be transferred to the ACM disposal roll off box with the fork lift.
- The decontamination station will be transferred to Building 7 in the same manner it was transferred from Building 2 to Building 3.

#### Building No. 7: Reverberatory Furnace Building

The reverberatory furnace building will be accessed through a large doorway on the west side of the building. The ACM requiring removal is summarized in Table 5 below:

**Table 5 - Reverberatory Furnace Building**

Location	ACM Type	Amount	Units
Middle of North Wall	Pipe Insulation (aircell)	30	LF

NE Corner under Lift	Debris from Pipe Insulation	25	SF
Under Piping	Debris	120	SF

ACM removal will be addressed in the following manner:

- Personnel will install a mobile decontamination station adjacent to the western door opening in a similar manner as Building 2.
- Personnel will enter the building on the main floor to begin removal of small debris accumulations beneath piping runs prior to starting removal of ACM covered piping. ACM debris accumulations will be wetted, picked up and placed in burial bags. An asbestos vacuum will be used to collect residual material from the floor surface 2 feet beyond the extent of the debris accumulation. The areas beneath these materials will be vacuumed with an asbestos vacuum.
- The skid steer loader with forks and/or bucket will be brought in to move debris and furnishings to create access for ACM pipe wrap removal. An articulating manlift will be used access ACM covered piping for ACM removal by glove bagging technique.
- Removed ACM material will be placed in second ACM burial bag, and proper labels will be affixed. Material will then be transferred to the ACM disposal roll off box with the fork lift.
- The decontamination station will be transferred to Building 14 in the same manner it was transferred from Building 2 to Building 3.

Building No. 14: Briquetting Plant & Building No. 15: Crushing Plant

Buildings 14 & 15 will be addressed concurrently. The ACM requiring removal is summarized in Table 6 below:

**Table 6 - Building 14 Briquetting Plant & Building 15 Crushing ACM Removal Summary**

Building	Location	ACM Type	Amount	Units
Briquetting Plant	Main Floor	Pipe Insulation	50	LF
	Under Piping	Debris	200	SF
Crushing Plant	Second Level East wall	Block Insulation	5	SF

The bulk ACM pipe wrap is located on the outside of Building 14. ACM removal will be conducted as follows:

- ACM debris located beneath the piping runs will be removed prior to removing pipe wrap. ACM debris piles will be wetted, picked up and containerized in an ACM burial bag both inside and outside the building. The surfaces where ACM debris was removed will be vacuumed with an asbestos vacuum.
- ACM pipe wrap will be removed from the ground and/or from the manlift using the glove bagging technique. Glove bag/ACM will be placed into an ACM burial bag and taken to the disposal roll off box.



- Personnel will enter the Crushing Plant Building to ascend to the second floor to remove the 5 SF of block insulation. The block will be wetted, dislodged, and bagged in an ACM burial bag. The ACM burial bag will be placed in second and possibly a 3 bag and sealed. Proper labels will be affixed and material will be sent to the disposal roll off box.

#### Building No. 16: Pump House

The ACM requiring removal is summarized in Table 7 below:

**Table 7- Building No. 16 Pump House ACM Removal Summary**

Location	ACM Type	Amount	Units
Main Area, Shed, and South Exterior	Pipe Insulation and Debris	225	LF

The ACM in this building is on elevated piping runs that will be accessed with either a ladder and/or manlift. ACM removal will follow the following procedure:

- Personnel will install a mobile decontamination station adjacent to the door opening in a similar manner as Building 2.
- Personnel will enter the building on the main floor to begin removal of small debris accumulations beneath piping runs prior to starting removal of ACM covered piping. ACM debris accumulations will be wetted, picked up and placed in burial bags. An asbestos vacuum will be used to collect residual material from the floor surface 2 feet beyond the extent of the debris accumulation. The areas beneath these materials will be vacuumed with an asbestos vacuum.
- The skid steer loader with forks and/or bucket will be brought in to move debris and furnishings to create access for ACM pipe wrap removal. An articulating manlift and/or ladders will be used access ACM covered piping for ACM removal by glove bagging technique.
- Removed ACM material will be placed in a second ACM burial bag, and proper labels will be affixed. Material will then be transferred to the ACM disposal roll off box with the fork lift.
- The decontamination station will be transferred to Building 17 in the same manner it was transferred from Building 2 to Building 3.

#### Building No. 17: Cupola Furnace Building

This building will require clearing of the doorway west wall of the north room to access the building and remove ACM. This building ACM is present in the form of pipe wrap and insulation around a 24" valve.

**Table 8 - Building No. 17 Cupola Furnace Building ACM Removal Summary**

Location	ACM Type	Amount	Units
North Room	Pipe Insulation (approx. 5	200	LF

	large fittings)		
North Room	24" Valve Insulation	50	SF
North Room	Debris	800	SF

ACM removal will follow the following procedure:

- Personnel will install a mobile decontamination station adjacent to the door opening in a similar manner as Building 2
- Personnel will enter the building on the main floor to begin removal of small debris accumulations beneath piping runs prior to starting removal of ACM covered piping in the same manner described in previous sections.
- The skid steer loader with forks and/or bucket will be brought in to move debris and furnishings to create access for ACM pipe wrap removal as needed. An articulating manlift and/or ladders will be used access ACM covered piping for ACM removal by glove bagging technique.
- ACM from around the 24" valve will be heavily wetted, and then a mini-enclosure will be constructed around the valve. PVC piping will be used for the frame work of the enclosure. Plastic sheeting with glove bag hand inserts will be fabricated to permit access to dislodged ACM. The enclosure will have a negative air draw placed upon it with the Asbestos vacuum.
- Removed ACM material will be placed in a second ACM burial bag, and proper labels will be affixed. Material will then be transferred to the ACM disposal roll off box with the fork lift.
- The decontamination station will be transferred to Building 19 in the same manner it was transferred from Building 2 to Building 3.

#### Building No. 19: Baden Hausen Boiler Building

The quantity of asbestos in this building is estimated, because access was not available during the assessment performed by ATC. The building is a 2 story poured concrete building that houses a large boiler. Access to the top of the boiler will be via ladder. A manlift will be utilized if suitable access is available. The ACM requiring removal is summarized in Table 9 below:

**Table 9 - Baden Hausen Boiler Building ACM Removal Summary**

Location	ACM Type	Amount	Units
Top of Boiler Room	Pipe Insulation	15	LF
Top of Boiler Room	Debris	300	SF

Site personnel will access the top of the boiler and remove ACM debris following procedures previously discussed, and remove ACM pipe wrap using the glove bag technique. Workers will be wearing fall protection body harnesses and lanyards secured following OSHA elevated work regulations. Removed material will be containerized in ACM burial bags and lowered safely to the ground in a controlled fashion.

#### Building No. 18: Boiler House

Access in this building is limited. The skid steer loader and manlift will be utilized to increase productivity if possible. Work may need to be performed with ladders for some if not all of the work. The ACM requiring removal is summarized in Table 10 below:

**Table 10 - Building No. 18 Boiler House ACM Removal Summary**

Location	ACM Type	Amount	Units
Boiler Room	Pipe Insulation	500	LF
Boiler Room	Pipe Joint Insulation	30	LF
Boiler Room	Debris	800	SF

ACM removal will follow the following procedure:

- Personnel will install a mobile decontamination station adjacent to the door opening in a similar manner as Building 2.
- Personnel will enter the building on the main floor to begin removal of small debris accumulations beneath piping runs prior to starting removal of ACM covered piping in the same manner described in previous sections.
- The skid steer loader with forks and/or bucket will be brought in (if possible) to move debris and furnishings to create access for ACM pipe wrap removal as needed. An articulating manlift (if possible) and/or ladders will be used to access ACM covered piping for ACM removal by the glove bagging technique. ACM/Glove bag will be placed in an ACM burial bag, and lowered to the ground in a controlled fashion.
- ACM from around the pipe joints valve will be heavily wetted, and then removed using the glove bag technique.
- Removed ACM material will be placed in a second ACM burial bag, and proper labels will be affixed. Material will then be transferred to the ACM disposal roll off box with the fork lift.
- The decontamination station will be transferred to Building 11 in the same manner it was transferred from Building 2 to Building 3.

#### Building No. 11: Cooper Stock Building

The interior of this building is accessible by personnel only. However, the outside of the building has 50 LF of pipe wrap that is best removed by a manlift. The ACM requiring removal is summarized in Table 11 below:

**Table 11 - Building No. 11 Boiler House ACM Removal Summary**

Location	ACM Type	Amount	Units
1 <sup>st</sup> & 2 <sup>nd</sup> Floor and Exterior	Pipe Insulation-Bulk Storage	230	LF
SW Corner on Table	Gaskets	100	LF
SW Corner on Floor	Small Hose	10	LF

ACM removal will follow the following procedure:

- Personnel will install a mobile decontamination station adjacent to the door opening in a similar manner as Building 2.
- Personnel will enter the building on the main floor and ascend to the loft area to begin removal of small debris accumulations beneath piping runs prior to starting removal of ACM covered piping in the same manner described in previous sections. The crew will wet, recover and containerize the gasket material and hose sections on the main level of the building.
- An articulating manlift (if possible) will be used to access ACM covered piping for ACM removal by glove bagging technique on the exterior of the building. Ladders will be used to access pipe wrap for removal by glove bag technique inside the building. ACM/glove bag will be placed in an ACM burial bag, and lowered to the ground in a controlled fashion.
- Removed ACM material will be placed in a second ACM burial bag, and proper labels will be affixed. Material will then be transferred to the ACM disposal roll off box with the fork lift.
- The decontamination station will be transferred to Building 20 in the same manner it was transferred from Building 2 to Building 3.

#### Building No. 20: Machine Shop

This single story building contains very small quantities of ACM in the form of pipe wrap and ACM paper. No heavy equipment will be required for ACM removal. The ACM requiring removal is summarized in Table 12 below:

**Table 12 - Building No. 20 Machine Shop ACM Removal Summary**

Location	ACM Type	Amount	Units
Second Floor Loft	Pipe Insulation	50	LF
2 <sup>nd</sup> Floor Loft NE Corner	Paper	50	SF

ACM removal will follow the following procedure:

- Personnel will install a mobile decontamination station adjacent to the door opening in a similar manner as Building 2.
- Personnel will enter the building on the main floor and ascend to the loft area to begin removal of small debris accumulations beneath piping runs prior to starting removal of ACM covered piping in the same manner described in previous sections. The crew will wet, recover and containerize the paper material on the loft level of the building.
- Ladders will be used if needed to access pipe wrap for removal by glove bag technique inside the building. ACM/glove bag will be placed in an ACM burial bag, and lowered to the ground in a controlled fashion.
- Removed ACM material will be placed in a second ACM burial bag, and proper labels will be affixed. Material will then be transferred to the ACM disposal roll off box with the fork lift.
- The decontamination station will be broken down. Expended components will be bagged and transferred to the roll off for disposal.

### Transportation and Disposal of ACM

EQ will arrange for transport and disposal of ACM material from removal operations. Material will be disposed at Delta County Landfill, the Upper Peninsula of Michigan, CERCLA Subtitle D disposal Facility. Waste will be shipped on a non-hazardous manifest/straight bill of lading for tracking purposes.

### Personnel Air Monitoring

EQ's team subcontractor will perform personnel exposure air monitoring to assure work practices are sufficient to protect workers from exposure to ACM.

### Demobilization

EQ will demobilize site personnel and resources to their home office upon completion of ACM removal and decontamination of site equipment.

## SECTION 3

### RESOURCES

The resource EQ will utilize for the various tasks are summarized Table 13 below:

**Table 13 - ACM Removal Resources**

Description	Quantity
Response Manager	1
Field Cost Administrator	1
T&D Coordinator	1
Industrial Hygienist/Safety Inspector	1
Asbestos Supervisor	1
Asbestos Heavy Equipment Operator	1
Asbestos Removal Technicians	3
Pick Up Trucks	5
Skid Steer Loader	1
Articulating Manlift 40' Reach	1
Office Trailer 8' by 30'	1
50 KW Generator	1
Asbestos Decon/Shower Trailer	1
Telescopic Forklift	1
5 KW Generators	3
Trash Pump 2"	1
Poly Tank 300 gallon	1
Asbestos Vacuums	3
Portable Light Sets	3
Misc. Hand/Power Tools	1
Structural Engineers RFS Assessment & Monitoring	1
Fuel for Heavy Equipment/Generators	700 gallons
Fuel for Pickups	600 gallons
Mob/demob for heavy Equipment	1
Per Diem & Lodging	8 for 14 nights
Misc. Expendables plastic, ACM burial bags etc.	
ACM T&D	1

## **SECTION 4**

### **PROJECT SCHEDULE**

EQ anticipates working 6 days per week, 11 hours per day, for the duration of the removal effort. EQ anticipates the SE Inspection will take place on or about May 5, 2008. EQ plans to mobilize to the site on Monday, June 9, 2008. EQ expects work to be complete by Friday, June 20, 2008. The schedule below presents details concerning the execution of the scope of work.

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## **SECTION 5**

### **COST ESTIMATE**

EQ estimates the cost for completing work described in the Work Plan as follows:

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