PLAINTIFF'S EXHIBIT TPI-67

COMPLIANCE SCHEDULE DESCRIPTION

NORTH PLANT ENVIRONMENTAL PROGRAM

OSHA CITATION NO. M8099 - NO. 123

Our complete program is based on the following procedure.

1) Application for an extension to the (PMA) Petition for Modification of Abatement date which was submitted in March of 1982.

2) Engineering efforts to be directed towards development of a comprehensive compliance plan which will consist of three (3) basic sections.

   a) Engineering Recommendations - specific recommendation and drawings illustrating the proposed compliance program including type of control, air volumes, equipment locations, etc.

   b) Costs - breakdown of all estimated cost for the control techniques covered in the Engineering section.

   c) OSHA Program - the actual plan to be submitted to OSHA in the form of a PMA.

Even though we covered all dust, smoke and fugitive emission points in the following areas does not mean it will be necessary to control all of them. Due to the physical locations of the machines and process lines in relation to each other by controlling emissions in one (1) area may eliminate the necessity of controlling all points on an adjacent area.

This program will be instituted in "PHASES" for evaluation and economic feasibility. There is no reason to spend money on any locations where we cannot achieve appreciable results.

Since our PMA requested on March 26, 1982 was extended to April 1, 1985 we implemented an extensive experimental and testing program to acquire a non-silica material in our pipe mold spray that was compatible to our particular type of operation. On January 10, 1983, we completely eliminated all silica from our pipe mold spray operation. We continued with our testing program to determine the rate of decline of silica not only in the cited areas but the complete North Plant. Since each pipe machine runs different sizes and types of pipe, due to the national economy, all of our pipe machines were not operating on a continuous basis which extended our testing program.

The following program is not implemented to control silica only, it is our ultimate objective to contain, control and remove all dust, smoke and fugitive emissions, where "economically feasible", from the the entire North Plant at the lowest possible cost.

The enclosures, hoods, etc. will be designed to remove the fine fugitive emissions vented to the outside atmosphere, and contain the heavy visible particulates; however, there is the possibility by venting to the outside atmosphere that we could be in non-compliance with the Texas Air Quality Board in regard to perimeter sampling. If this happens it will necessitate

additional dust collection systems at certain areas. At this time we have no way of knowing the perimeter exposure level created by our initial program until the program is completed. In any event we will continue with the initial program and if at a future date any additional dust collection systems are required we will have determined their exact volumes, areas and locations.

Based on the results of our testing program we cannot guarantee with reasonable engineering certainty the cited areas, per OSHA No. M8099 - No. 123 dated 6-3-81 which is the employee exposure to dust containing crystalline silica at the 234 and 456 Machines Core Set Stations, can be brought into compliance with OSHA regulations. It is essential we extend all efforts to bring these areas in compliance.

Since this is a centrifugal sand cast and permanent mold foundry, ~~which uses the~~ equipment and approaches ~~which~~ are unique ~~in~~ the foundry industry, there are ~~no established successful control methods~~ for the problem areas. As a result it will be necessary to use experimental methods, in prototype programs, in order to develop control methods for the unique problem areas.

~~Due to~~ Through our extensive testing program, of the complete North Plant ~~with the exception~~ of the Cupola ~~propos~~, we have identified ~~not only the cited areas but other~~ non-silica related ~~areas~~ problems such as nuisance dust, smoke and fugitive emissions that are not detrimental to personnel health but should be cleared up.

All pipe machines, process lines, pits, P.M. stands, fittings core machines, P.M. wheels, hot coat system, sand reclamation and hub core machines have been isolated and designated in the following areas per Drawing No. E-3009-1.

Area A

234 Machine, Process Line, Pit & Mullor

Area B

456 Machine, Process Line & Pit

Area C

L.D.S.C. Machine, Process Line & Pit

Area D

Permanent Mold Stands - No's 1 thru 12

Area E

L.D. 10 Ft. Permanent Mold Machines & Process Line

Area F

Hub Core Machines

Area G

Akers II & III Pipe Machines & Process Lines

Area H

Fittings Core Machines, P.M. Wheels, Hot Coat & Sand Reclamation Systems

Miscellaneous

1) Install a metal barrier wall to run east and west between L.D.S.C. and 234 Machines to break up the air currents in this area. The bottom of the wall to be above the 234 Machine iron delivery track and extend upward to peak of building. This will require a powered roof ventilator to be located on the north side of the wall.

2) Tighten the control of all sand systems which will require the following:

   a) Enclose as much as possible all overhead sand delivery and return belts discharge points.

   b) Purchase and install one (1) brush type belt wiper on the 456 prepared sand discharge belt for evaluation.

   c) Enclose as much as possible all elevator discharge points and patch all holes or openings in elevators.

   d) Replace or patch all holes in all existing Dust Collector Systems and when replacing ductwork install gaskets between all duct flanges.

3) Design some type of control for the Mixing Ladle proper and the discharge when filling bull ladles.

4) Install a metal barrier wall to run east and west from the north side of the operators platform of the Hot Coat System to the peak of the building to break up the air currents in this area.

AREA A
234 Machine

We currently have a dust collection system on this unit with seventeen (17) drops with a total system capacity of 53,390 CFM. The fan is a "Buffalo Forge" Type H26, size #1085, arrangement #1 with a direct connected 250 H.P., 1200 R.P.M., 3 phase/60 cycle/230-460 volt, Frame #5808 ML drive

motor. OSHA and T.P.I. tests shown we were in non-compliance in the East and West Core Set Stations in regard to free silica. In order to bring these stations in compliance we designed enclosures purged with outside air from our man cooler system. This proved successful as long as the man cooler systems were operating; however, in the winter months with the man cooling systems off we were in non-compliance.

~~Due to the location of~~ The core set station is adjacent to the slingers, and after ~~continuous testing~~ we discovered the sand slingers to be a contributing factor. ~~The decision has been made to~~ Install an enclosure to encapsolate the sand slingers and install four (4) fans rated at 10,000 CFM each with a total capacity of 40,000 CFM to exhaust to the outside atmosphere. The total cost of this enclosure ~~is to be approximately~~ $56,000.00.

~~In addition to the sand slinger enclosure~~ There are four (4) additional stations at the machine that emit smoke and dust. These locations are as follows.

1) Side draft hoods between the pouring station and shakeout. These hoods are currently tied into the shakeout collection system; however they are not removing the smoke and dust. It will require 5,500 CFM air to be vented to atmosphere.

2) Mold blowout prior to pouring station. This will require a side mount hood on each side of the machine with a total of 4,000 CFM air to be vented to atmosphere.

3) West side of pouring station. Smoke is emitted from the two (2) pipe molds at each pouring cycle. An angular side draft hood is required at this location to allow our production personnel to visually see the pipe when it is being poured. It will require 3,000 CFM air to be vented to atmosphere.

4) Blowout after sling station and prior to the core set station. This will be incorporated in the slinger enclosure.

The above three (3) locations will require a fan to exhaust a total of 12,500 CFM air vented to atmosphere at a total cost of approximately $13,000.00.

234 Machine Process Line

We currently have a dust collector with three (3) drops at this area which are located as follows.

1) Pipe blowout prior to the brush station.

2) Brush station.

3) Pipe blowout after the brush station.

The dust collector handles the pipe blowout stations; however, the brush station fluctuates in and out of compliance. If an enclosure was installed to encapsolate the two (2) reamer stations, the two (2) pipe blowout and

the brush station vented to the outside atmosphere would control all dust, smoke and fugitive emissions. This would require three (3) exhaust fans rated at 12,000 CFM each for a total of 36,000 CFM. The total cost of this enclosure would be approximately $50,000.00.

This machine and process line is to be a prototype for our sand slinger machines "ONLY". All efforts related to our sand slinger type machines, other than general ventilation, overhead sand delivery and return conveyors and more efficient belt cleaners will be directed on this machine and process line.

234 Machine Pit

We do not have personnel working in this pit when the machine is operating; however, we do have cleanup personnel in this pit between shifts and when the plant is not operating. In order to provide cool air to our cleanup personnel in the summer months we have one (1) 11"Ø duct from a man cooling system that supplies 1,988 CFM air.

We have an exhaust fan at this location vented to the outside atmosphere which is an "Aerovent" 36"Ø "V" belt driven vaneaxial fan operating at 1,582 R.P.M. and exhausting 24,410 CFM at 0.20" S.P. The fan drive motor is a 20 H.P., 1800 R.P.M., 3 ph./60 cy./230-460 V., T.E.F.C. Frame #286U.

Since the pit inlet air is from the man cooling system and this system does not operate in the winter months it will be necessary to install two (2) supply air fans from the outside atmosphere rated at 7,500 CFM each for a total of 15,000 CFM. The total cost to install these fans would be approximately $12,000.00.

234 Machine North & South Mullors Operator Work Station

Area tests taken on 3-26-84, 3-27-84 and 3-28-84 shows this work station to be in compliance.

Time Schedule

Slinger Enclosure

Engineering completed February 15, 1985.

Construction and installation completed May 15, 1985.

Testing completed June 15, 1985.

Reamer, Brush & Blowout Enclosure

Engineering completed April 15, 1985.

Construction and installation completed July 15, 1985.

Testing completed August 15, 1985.

General Ventilation

Engineering completed April 15, 1985.

Construction and installation completed July 15, 1985.

Testing completed August 15, 1985.

456 Machine, L.D.S.C. & 456 Mullor

We currently have one (1) dust collection system on these units. Due to the sand delivery and return systems we cannot operate the 456 Machine and the Large Diameter Sand Cast Machine simultaneously. Since we use the same dust collection system for both machines there are diverter valves isolating the machines from each other.

The fan is a "Buffalo Forge" Type H26, size #1085, arrangement #1 with a direct connected 250 H.P., 1200 R.P.M., 3 phase/60 cycle/230-460 Volt, Frame #5808 ML drive motor.

The total system capacity of the dust collector is 53,000 CFM.

AREA B
456 Machine

The operation of this machine is identical to the 234 Machine with the exception of the size of pipe produced and incorporates one (1) sand slinger instead of two (2). OSHA and T.P.I. tests show we are in non-compliance in the North and South Core Set Stations. We designed and installed enclosures similar to the type used on the 234 Machine and experienced the same results.

If enclosing the sand slingers on the 234 Machine proves successful we will then enclose the sand slinger on this machine. This will require four (4) fans rated at 10,000 CFM each with a total capacity of 40,000 CFM to exhaust to the outside atmosphere. The total cost of this enclosure to be approximately $48,000.00.

456 Machine Process Line

We currently have a dust collector with three (3) drops at this area which are located as follows.

1) Brush station

2) Blowout after brush station (north side)

3) Blowout after brush station (south side)

The dust collector handles the pipe blowout stations; however, the brush station fluctuates in and out of compliance. If an enclosure was installed to encapsolate the one (1) reamer station, the brush station and the two (2) pipe blowout stations vented to the outside atmosphere would control

all dust, smoke and fugitive emissions. This would require three (3) exhaust fans rated at 12,000 CFM each for a total of 36,000 CFM. The total cost of this enclosure would be approximately $50,000.00.

456 Machine Pit

We do not have personnel working in this pit when the machine is operating; however, we do have cleanup personnel in this pit between shifts and when the plant is not operating.

We do not have an exhaust fan at this location. In order to evacuate and achieve a negative pressure in the pit it would be necessary to use the push-pull method. This will require a fan rated at 7,500 CFM supply air from the outside atmosphere and a 10,000 CFM fan to exhaust to the outside atmosphere. The total cost to install this push-pull system would be approximately $14,000.00

AREA C
Large Diameter Sand Cast Machine

The operation of this machine is similar to the 456 Machine with the exception of the size of the pipe produced. As previously stated the dust collection system at this machine is the same system used on the 456 Machine since the two (2) machines cannot operate simultaneously. Enclosing the sand slinger at this location is questionable; however, if it is necessary it will require four (4) fans rated at 10,000 CFM each with a total capacity of 40,000 CFM to exhaust to the outside atmosphere. The total cost of this enclosure to be approximately $48,000.00.

In addition on the east side of the pouring station smoke is emitted from the pipe mold at each pouring cycle. An angular side draft hood is required at this location to allow our production personnel to visually see the pipe when it is being poured. This will require a fan rated at 5,000 CFM vented to the outside atmosphere at a total cost of $4,800.00

Large Diameter Sand Cast Machine - Process Line

We currently hvae three (3) drops from the dust collector in this area which are located as follows.

1) Brush station

2) Blowout after brush - east side

3) Blowout after brush - west side

In addition we have a reamer station located between the shakeout and brush that is not tied into the dust collection system.

Even though we have dust collector drops at the brush and blowout stations due to the physical location of the machine and wind currents it would seem feasible to install an enclosure to run from approximately 4 ft. north of

the shakeout to encapsolate the reamer, brush, and pipe blowout stations. Both blowouts after brush should be relocated closer to the brush station. This would require three (3) fans rated at 12,000 CFM each for a total of 36,000 CFM. The total cost of this enclosure would be approximately $50,000.00.

Large Diameter Sand Cast Machine - Pit

We do not have personnel working in this pit when the machine is operating; however, we do have cleanup personnel in this pit between shifts and when the plant is not operating.

We currently have two (2) dust collector drops at this location; one (1) at each shaker. One (1) drop has a capacity of 1,570 CFM and the other drop has a capacity of 5,500 CFM for a total of 7,070 CFM. In order to evacuate and achieve a negative pressure in the pit it would be necessary to use the push-pull method. This will require a fan rated at 7,500 CFM supply air from the outside atmosphere and a 10,000 CFM fan to exhaust to the outside atmosphere. The total cost to install this push-pull method would be approximately $14,000.00.

AREA D
Permanent Mold Stands - No's 1 thru 12

All tests taken on these stands were area samples. The latest tests taken on 4-16-84, 4-17-84 and 4-18-84 showed all areas in compliance with the exception of stands #9 and 10 which were in non-compliance on 4-16-84 and 4-18-84. Out of fifteen (15) tests taken in these areas we were in non-compliance on two (2) tests with one of the two (2) tests marginal (10.17%).

Since the latest tests were taken we have been experimenting with a mold wash (Perma-Kote 600) to increase the mold life. The mold wash is applied to the molds 4 times per 10 hour shift. Prior to applying new mold wash to the molds it is necessary to remove the deteriorated mold wash by sand blasting. We are currently experimenting with a Black Beauty #2040 blasting grit with less thatn 5% silica content.

It will be necessary to take personnel sample test in this area when using Perma-Kote 600 and the Black Beauty #2040 blasting grit. In the event we are in non-compliance it will be necessary to discontinue the Perma-Kote 600 and retest. No corrective measures in this area can be taken until personnel sampling is completed.

AREA E
L.D. 10 Ft. Permanent Mold Pipe Machines & Process Line

L.D. 10 Ft. P.M. Machines

We do not have a dust collector at this location.

All tests taken on these two (2) machines were area samples. The latest tests taken on 4-25-83, 4-26-83 and 4-27-83 was after we removed silica

from the pipe mold spray. Of this series of twelve (12) tests we were in non-compliance once which was at the East Core Set Station on 4-26-83. This could be due to wind currents carrying particulates from the reamer or blowout stations on the process line or from the adjacent 456 Machine. At such time the process line and the 456 Machine are brought in compliance we will retest this area.

Both machines are encapsolated to control the steam from water cooling the molds; however there is a considerable amount of smoke at the pouring stations when pouring the pipe.

This smoke can be controlled with two (2) side draft hoods vented to the outside atmosphere. This will require one (1) exhaust fan rated at 21,000 CFM at a total cost of $19,000.00.

L.D. 10 Ft. Process Line - Blowout & Reamer Stations

The existing pipe blowout station adjacent to the two (2) pipe reamer stations is manually operated. If feasible this station should be designed as an integral part of the reamer stations so it can blowout when the particulates are in suspension while reaming. This would eliminate any manual blowout, increase efficiency and reduce the size of an enclosure.

This will require an enclosure with two (2) fans rated at 10,000 CFM each for a total of 20,000 CFM vented to the outside atmosphere at a total cost of approximately $18,000.00.

If combining the reamer and blowout stations is not feasible the following is required.

1) Relocate blowout station adjacent to and east of the reamers. Automate blowout.

2) Design, fabricate and install an enclosure to encapsolate the two reamers and the relocated blowout station. This will require three (3) fans rated at 10,000 CFM each for a total of 30,000 CFM vented to the outside atmosphere at a total cost of approximately $26,000.00.

Time Schedule

This enclosure to be a prototype and designed, fabricated and installed "FIRST".

Engineering completed by 11-15-84.

Fabrication and installation completed by 12-31-84.

Testing (Technical Services) completed by 1-15-85.

3) Design, fabricate and install two (2) side draft hoods above holding and pouring ladles at each machine and vent to outside atmosphere.

Time Schedule

Engineering completed by 12-15-84.

Fabrication and installation completed by 1-15-85.

L.D. 10 Ft. Process Line - Prior to Dip Tank

After the enclosure on the Reamer and Blowout Stations has been installed and evaluated if we elect to install an additional 30 ft. long gravity stack type enclosure to the dip tank vented to the outside atmosphere would required approximately 30,000 CFM at a total cost of approximately $18,000.00.

L.D. 10 Ft. Process Line - After Dip Tank

In order to capture the smoke after the pipe has been dipped a 30 ft. long gravity stack type enclosure, vented to the outside atmosphere, from the dip tank to the end of the conveyor prior to bundling would require approximately 30,000 CFM at a total cost of approximately $18,000.00.

AREA F
Core Room - Core Machine Operators

On 5-24-82 and 5-25-82 fourteen (14) area tests were taken and all were found to be in compliance. This is a well ventilated building.

AREA G
Akers II & III Permanent Mold Pipe Machines & Process Lines

Akers II Pipe Machine

We do not have a dust collector at this machine.

Since we completely eliminated all silica from the pipe mold spray on January 10, 1983, there was a dramatic decrease in silica exposure. All area tests taken after 1-10-83 and personnel tests taken on 10-8-84 were in compliance in regard to silica; however, we should control the dust and smoke emissions at the following locations even though they are not a health hazard in regard to silica.

1) Mold blowout prior to spray. This dust can be controlled with one (1) side draft hood vented to the outside atmosphere. This will require one (1) exhaust fan rated at 3000 CFM at a total cost of approximately $2,700.00.

2) Pouring Station (South Side). Smoke is emitted from the pipe molds at each pouring cycle. An angular side draft hood vented to the outside atmosphere is required at this location to allow our production personnel to visually see the pipe when it is being poured. This will required one (1)

exhaust fan rated at 10,500 CFM at a total cost of approximately $9,500.00.

3) Extractor Station (prior to pick up for pipe transfer). Smoke is emitted from the pipe at this location. This smoke can be controlled with a canopy type hood vented to the outside atmosphere. This will require one (1) exhaust fan rated at 27,000 CFM at a total cost of approximately $24,000.00.

Akers II Process Line

We have a HEAF smoke and fume collector at the dip tank which works in conjunction with the Akers III dip tank. The total capacity of this unit is 21,000 CFM. The efficiency of this one (1) collector removing smoke from both Akers II and III dip tanks is marginal. If we divorced this collector from Akers II and installed an identical collector it would cost approximately $75,000.00. If may be possible to replace the 150 H.P. fan motor with a 200 H.P. and achieve sufficient results. This will definitely require further investigation.

The latest area tests taken on 4-30-84, 5-1-84 and 5-2-84 were in compliance in regard to silica; however, there is smoke emission from the pipe on the conveyor prior to and after the dip tank. If we elect to control these emissions even though they are not a health hazard in regard to silica it would require the following.

1) Process line prior to dip tank. If we installed an enclosure 30 ft. long from the start of the conveyor to the dip tank with gravity stacks vented to the outside atmosphere it would required approximately 40,000 CFM air and cost approximately $18,000.00.

2) Process line after the dip tank. If we installed an enclosure 50 ft. long with gravity stacks vented to the outside atmosphere it would require approximately 60,000 CFM air and cost approximately $29,000.00.

Akers III Pipe Machine

We do not have a dust collector at this machine.

This machine is similar to Akers II with the exception it is a double pour instead of a single pour machine and it produces larger pipe. All area tests taken and personnel tests taken on 10-1-84 were in compliance in regard to silica; however, we must control the dust and smoke emissions at the following locations even though they are not a health hazard in regard to silica.

1) Mold blowout prior to spray. This dust can be controlled with one (1) side draft hood vented to the outside atmosphere. This will require one (1) exhaust fan rated at 3000 CFM at a total cost of approximately $2,700.00.

2) Pouring station (south side). Smoke is emitted from the pipe molds at each pouring cycle. An angular side draft hood vented to the outside atmosphere is required at this location to allow our production personnel to visually see the pipe when it is being poured. This will require one (1) exhaust fan rated at 10,500 CFM at a total cost of approximately $9,500.00.

Akers III Process Line

We have a HEAF smoke and fume collector at the dip tank which works in conjunction with the Akers II dip tank. The total capacity of this unit is 21,000 CFM.

The latest area tests dated 4-30-84, 5-1-84 and 5-2-84 were in compliance in regard to silica; however, there are dust and smoke emissions at the following locations even though they are not a health hazard in regard to silica.

1) Process line prior to the dip tank emits smoke. If we installed an enclosure 40 ft. long with gravity stacks vented to the outside atmosphere it would require approximately 50,000 CFM air and cost approximately $23,000.00.

2) Process line after the dip tank emits smoke. If we installed an enclosure 50 ft. long with gravity stacks vented to the outside atmosphere it would require approximately 60,000 CFM air and cost approximately $29,000.00.

AREA H
P.M. Wheels, Fittings Core Machines, Hot Coat & Sand Reclamation

10 Station Permanent Mold Wheel

All tests taken on this wheel were area samples. The latest tests taken on 4-2-84, 4-3-84 and 4-4-84 were in compliance with the exception of the drop to shakeout on 4-2-84, which was marginal (10.6%), and the mold blacker station on all three tests. Of twelve (12) tests taken at this location we were in non-compliance on four (4) with the mold blacker station the worst offender. Even though there is no personnel at this station smoke is emitted to the inside atmosphere. The mold blacking media is acetylene which protects the molds and acts as a release agent when the fittings castings are removed from the molds. The castings drop on a shaker conveyor and are conveyed to a millroom where they are processed by grinding and dipping.

The same mold blacker exhaust system is used on both the ten (10) station and fourteen (14) station PM wheels and is exhausted to the Re-Coup system and the cupola air pollution scrubber. A diverter valve controls the volume of smoke to each location.

The exhaust fan is a "New York Blower" size 292-RTOK, G.I. centrifugal fan. In June 1984 we replaced the 15 H.P. fan drive motor with a 25 H.P. motor and increased the fan R.P.M. from 1,508 R.P.M. to 1,920 R.P.M. and the volume from the fan discharge from 8,632 SCFM to 10,963 SCFM (21%) which changed the face velocity thru the hood from 24.7 F.P.S. to 31.2 F.P.S. This obviously increased the hood efficiency; however, after other corrective measures in this area have been initiated we should retest and evaluate the complete blacker system and retest the drop to shakeout.

14 Station Permanent Mold Wheel

The method of operation of the ten (10) station and fourteen (14) station P.M. wheels are identical.

All tests taken on this wheel were area samples. The latest tests taken on 3-19-84, 3-20-84 and 3-21-84 were in compliance with the exception of the pouring station on 3-20-84 and the mold blacker station on 3-20-84 and 3-21-84 (10.0%). Of twelve (12) tests taken at this location we were in non-compliance on three (3) with the mold blacker station the worst offender. As previously mentioned the same mold blacker exhaust system is used on this P.M. wheel and the ten (10) station P.M. wheel. After other corrective measures in this area have been initiated we should retest the pouring station.

10 & 14 Station Permanent Mold Wheels - Pit

We do not have personnel working in this pit when the wheels are operating; however, we do have cleanup personnel in this pit between shifts and when the plant is not operating. In order to provide cool air to our cleanup personnel in the summer months we have two (2) 11"Ø ducts from a man cooling system that supplies a total of 4,343 SCFM air.

In addition to remove heat and smoke from infiltrating to the floor level we have two fans vented to the outside atmosphere which are as follows.

North Fan

"Hartzell" #54-42-V03, Type VA, Series 54, 42" I.D. w/a 15 H.P., 1800 R.P.M., 3 ph./60 cy./230-460 V., T.E.F.C. Frame 284U drive motor, "V" belt driven. (Operating @ 31,321 SCFM @ 1,208 R.P.M. @ 0.15" W.C. static pressure)

South Fan

"Hartzell" #54-48-VP3, Type VA, Series 54, 48" I.D. w/a 20 H.P., 1800 R.P.M., 3 ph./60 cy./230-460 V., T.E.F.C. Frame 256T drive motor, "V" belt driven. (Operating @ 32,375 SCFM @ 1,146 R.P.M. @ 0.12" W.C. static pressure)

The total current operating volume of both fans is approximately 63,696 SCFM.

10 & 14 Station Permanent Mold Wheels - Process Line

All tests taken at this location were area samples. The latest tests taken on 5-14-84, 5-15-84 and 5-16-84 were in compliance with the exception of the magnetic belt adjacent to the core crusher on 5-16-84, which was marginal (10.8%). Of twenty-one (21) tests taken we were in non-compliance on one (1). Since these tests were taken the fittings shaker conveyor has been encapsolated and vented to the outside atmosphere.

Even though the magnetic belt was in compliance two (2) of the three (3) tests taken, it does emit dust and should be evaluated whether or not to install a canopy type hood with forced air vented to outside atmosphere.

The total air volume required is approximately 43,000 CFM at a cost of approximately $38,000.00 which includes exhaust fans.

Sand Reclamation System

We currently have a venturi type scrubber dust collection system at this location with twelve (12) drops with a required system capacity of 20,996 CFM. This system was installed in 1975.

The fan is a "Clarage" #229, type XL radial blade "V" belt driven with a 200 H.P., 1800 RPM, 3 ph./60 cy./230-460 V., T.E.F.C. frame #5008 type J electric motor with the fan inlet volume of 21,967 SCFM at -23.0 In. W.C. static pressure.

All tests taken at this location were area samples. The latest tests taken on 3-19-84, 3-20-84 and 3-21-84 showed all areas in compliance with the exception of the column west of the reclaimed sand conveyor (floor level) which was in compliance twice and in non-compliance once. There are no personnel working at this location; however due to wind currents there are particulates that become air borne. This presents no problem since we will cover this conveyor and encapsolate the discharge to the elevator.

Hot Coat System

We currently have a venturi type scrubber dust collection system at this location with ten (10) drops and a required system capacity of 21,000 CFM. This system was installed in 1975.

The fan is a "Clarage" #229, type XL radial blade "V" belt driven with a 200 H.P., 1800 R.P.M., 3 ph./60 cy./230-460 V., T.E.F.C. frame #5008 type J electric motor with the fan inlet volume of 20,756 SCFM @ -22.75 In. W.C. static pressure.

All tests taken at this location were area samples. Tests taken on 4-2-84, 4-3-84 and 4-4-84 at the mullor discharge were in compliance.

Tests taken on 3-26-84, 3-27-84 and 3-28-84 at the operator work station were in non-compliance. Since the dust collector was installed we removed obsolete equipment in this area, such as elevators, sand bins, etc. In an attempt to bring this area in compliance it will require the following.

1) Evaluate the complete dust collection system take-off points and ductwork. With the removal of the obsolete equipment the system can be redesigned with shorter duct runs and possible duct sizing. Sections of the existing ductwork is deteriorated and in need of replacement.

2) The speedheater is the worst offender. By redesigning the system to increase the negative pressure and relocate the duct from the east side of the housing to the south side we may eliminate this problem. In any event this should be evaluated.

   If redesigning the ductwork is ineffective it will require a side draft angle type hood located above the burners with a fan rated at 5,000 CFM vented to the outside atmosphere at a total cost of approximately $6,500.00. This would be the last resort.

Fittings Core Machines

On 10-2-80 and 10-7-80 personnel samples were taken on the operators of #5 & 6, 7 & 8, 9 & 10 and 11 & 12 machines and were shown to be in compliance.

Since we have enclosures on these machines and the machines were in compliance no further tests were taken.

These machines have a man cooling system that provides cool water washed air from the outside atmosphere. In the summer months the operators have portable type box fans for additional cooling. Since the box fans blow horizontally they carry particulates to other areas. These box fans should be "ELIMINATED", not only at this location but all locations where proven detrimental.

SUMMARY

As previously stated this complete program will be instituted in "PHASES". The time schedules of the complete program will be based on the effectiveness of prototype enclosures, hoods, etc.; however, there are obvious areas we can control in conjunction with and prior to completion of the prototype experimentation.