OhioEPA

State of Ohio Environmental Protection Agency

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**CERTIFIED MAIL # 91 7108 2133 3932 4449 5071**

March 30, 2010

David Chamberlain
Columbus Steel Castings
2211 Parsons Avenue
Columbus, OH 43207

**Re: Notice of Violation based upon the ongoing compliance evaluation for Columbus Steel Castings dba Columbus Castings; Facility premise No. 0125040020**

Dear Mr. Chamberlain:

Ohio Environmental Protection Agency (Ohio EPA), Division of Air Pollution Control (DAPC), Central District Office (CDO), has completed a full compliance evaluation of Columbus Steel Castings (CSC), located at 2211 Parsons Avenue, Columbus, Ohio. Full compliance evaluations of Title V facilities are conducted on a bi-annual basis, consistent with federal policy. The purpose of this facility compliance evaluation is to document a facility's compliance status with the effective Title V permit to operate, applicable Permits to Install (PTIs), the approved Preventive Maintenance and Malfunction Abatement Plan (PMMAP), and applicable state and federal rules and regulations. A full compliance evaluation consists of an evaluation of Title V non-insignificant emissions units, many known physical operations and many insignificant emissions units via an on-site inspection and review of applicable facility records (current and historical), correspondence, and notifications.

This letter summarizes Ohio EPA's findings of the on-site inspection portion of CSC's compliance evaluation. Ohio EPA, CDO/DAPC representatives performed the on-site inspection portion of the compliance evaluation during several site visits in June and July of 2009. A separate letter will address Ohio EPA's review of facility records, Title V compliance certifications, Title V fee emissions reports, and other materials.

Since the on-site inspection occurred, CSC has explained that they have undertaken or intend to undertake modifications to existing equipment or replace equipment at the facility. Ohio EPA recognizes that these changes either directly or indirectly address many of the issues identified during this compliance evaluation. When responding to this letter Ohio EPA recommends that CSC clearly explain how specific changes will affect outstanding violations at the facility, technical details of the specific changes, submit necessary PTI

applications or justification for why PTI applications are not necessary, and all supporting assumptions and documentation.

Listed below are "Findings" based upon Ohio EPA inspector observations, Method 9 readings, specific process information, and/or observed operations of various emissions units installed at the facility (if possible). The "Finding(s)" below are followed by "Violation(s)" (where applicable) and "Requested Action(s)" considered necessary to resolve any stated violations. A summary of requested actions and dates necessary to address any observed violations concludes the letter. For the sake of clarity, emission units have been grouped according to their respective department or function when possible.

1. **Finding:** Unpermitted Breakout Operations: Manipulator Breakout Area, 3F Mill Breakout Area, and East Pit Breakout Area

On June 2, 2009, Ohio EPA personnel observed a pile of castings and sand in the vicinity of the P906 manipulator arm enclosures (Manipulator Breakout Area) which were the apparent result of breakout operations. Additionally, no evidence of reasonably available control measures (RACM) for emissions of fugitive particulate matter from this fugitive dust source were observed. CSC personnel explained that they are breaking out couplers and short pours outside of the manipulator arm enclosure. CSC personnel further explained that they broke out couplers near the enclosure entrance to capture some of the dust and that they had never stopped the breakout of short pours in the East End Pit area. CDO staff explained that these activities were not in compliance with the existing applicable air permit.

On June 4, 2009, Ohio EPA personnel observed a pile of castings and sand in the vicinity of the P906 manipulator arm enclosures (Manipulator Breakout Area) which were the apparent result of breakout operations. It was not apparent that the facility had employed or was employing RACM for emissions of fugitive particulate matter from this fugitive dust source. CSC personnel indicated that the observed castings (couplers) appeared to have been broken out at that location, but had no additional information.

On June 15, 2009, CSC personnel confirmed that breakout operations without capture hooding occur in three discrete locations: outside the manipulator arm enclosure (P906), near the 3F Mill (P904), and in the East end sand pit. Ohio EPA personnel informed CSC that these were not permitted operations, and in addition required an issued, final permit in order to perform the breakout operations. Additionally, Ohio EPA staff informed CSC personnel that continuing the unpermitted breakout operations was a violation of the Agreed Preliminary Injunctive Relief (API) filed in Franklin County Court on April 20, 2009 (CASE NO. 2008 CVH 60145).

On June 18, 2009, Ohio EPA personnel observed a pile of hot sand in the vicinity of the P906 manipulator arm enclosure (Manipulator Breakout Area) which was the apparent result of breakout operations. It was not apparent that the facility had employed or was employing RACM for emissions of fugitive particulate matter from this fugitive dust source. CSC personnel previously indicated that unpermitted breakout operations occur in this area.

On June 24, 2009, Ohio EPA personnel observed the 3F mill breakout area, which was located near the 3F mill. No unpermitted breakout operations were occurring at this location during this inspection, but piles of broken molds and cores were evident. Additionally there is no provision in the area for collecting dust generated during breakout operations. It was not apparent that the facility had employed or was employing RACM for emissions of fugitive particulate matter from this fugitive dust source. Facility personnel confirmed that uncontrolled, unpermitted breakout operations occurred in that area, but generally only on third (night) shift. Ohio EPA staff again explained that continuing unpermitted breakout operations was a violation of the applicable rules and of the API.

On July 28, 2009, Ohio EPA personnel observed a pile of castings and sand in the vicinity of the P906 manipulator arm enclosures (Manipulator Breakout Area) which were the result of uncontrolled breakout operations. The overhead crane was lifting parts that had been broken out in the area and transporting them to a waiting rail car. Facility personnel confirmed that the parts had been broken out in the area and were being transported to the coupler building for finishing. Ohio EPA personnel again notified CSC that this operation was not permitted, and would require a permit-to-install. Facility personnel conceded that this was the case and that this emissions unit was included in the most recent Title V permit to operate application as emissions unit Z033. Additionally, it was not apparent that the facility had employed or was employing RACM for emissions of fugitive particulate matter from this fugitive dust source.

Upon investigation, the effective Title V permit, the renewal Title V application submitted on May 19, 2006, the initial Title V permit application submitted on February 28, 1996, RACM studies for facility operations, historical PTI and PTO applications, and Title V Fee Emissions Reports from 1995 to 2007 do not indicate the presence of existing breakout operations aside from previously permitted breakout / shakeout operations. Ohio EPA considers these uncontrolled and unpermitted breakout operations new sources, and as such each operation was required to obtain a PTI from Ohio EPA prior to installation and operation.

The Manipulator Breakout Area, 3F Mill Breakout Area, and East End Breakout Area were not issued PTIs prior to installation and operation, and are considered "new sources" under OAC rule 3745-31-01. These new sources may also be considered "major modifications" under OAC rule 3745-31-01. In addition, none of these sources use any type of capture or control that could be considered RACM.

It is possible that toxic air contaminant emissions from these fugitive sources may exceed the Threshold Limit Value for some air toxics the maximum acceptable ground level concentration as described in ORC 3703.04(F)(4). Without the evaluation required by this section, it is unknown what, if any, toxic emissions result from these breakout operations. Permit-to-install application 01-12080 (which was subsequently returned to CSC as incomplete) for the 3F Mill Breakout Area appeared to indicate that operation of this emissions unit may result in toxic air contaminant emissions above the threshold set forth in ORC 3704.303(F)(4).

**Violations:**

Failure to obtain a permit-to-install prior to installation of a new source is considered a violation of Ohio Administrative Code (OAC) rule 3745-31-02(A), which states that

> "*...no person shall cause, permit, or allow the installation or modification of a new source ...without first obtaining a permit to install from the director.*" Violations of OAC rule 3745-31-02 are also considered violations of Ohio Revised Code (ORC) 3704.05(A), which states that "*No person shall cause, permit, or allow emission of an air contaminant in violation of any rule adopted by the director of environmental protection...*"

Failure to obtain a permit-to-install prior to the installation of a major modification is considered a violation of OAC rule 3745-31-21(A), which states that

> "*No owner or operator of a major stationary source or major modification located in a nonattainment area shall begin actual construction of such major stationary source or major modification unless, as a minimum, the requirements in rules 3745-31-21 to 3745-31-27 of the Administrative Code have been met and the owner or operator of the stationary source has obtained a valid Oho Environmental Protection Agency Permit-to-Install.*" Violations of OAC rule 3745-31-21(A) are also considered violations of ORC 3704.05(A).

Failure to employ reasonably available control measures (RACM) is considered a violation of OAC rule 3745-17-08(B). Violations of OAC rule 3745-17-08(B) are also considered violations of ORC 3704.05(A).

**Requested Actions:**

Ohio EPA requests that CSC submit PTI applications and appropriate EAC forms for each emissions unit and physical operation associated with the manipulator breakout area, the 3F Mill breakout area, and the East Pit breakout area within 120 days of receipt of this letter that include the following information:

- Hourly and annual potential to emit (PTE) calculations for all emissions units and physical operations associated with the breakout areas. The hourly and annual potential to emit analyses should be performed for volatile organic compounds (VOC), individual and combined Hazardous Air Pollutants (HAPs), particulate matter (PM), particulate matter with an aerodynamic diameter less than or equal to 10 micrometers ($PM_{10}$), and particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$).

- Maximum hourly PTE calculations for toxic air contaminants, as defined in OAC rule 3745-114-01, for all emissions units and physical operations associated with the breakout areas, along with the distance of each emissions unit and physical operation to the nearest fence line. The maximum hourly emissions rate for both the toxic air contaminants with the highest emissions rates and those with the lowest TWA or STEL should be modeled in accordance with Ohio EPA Engineering Guides 69 and 70 to demonstrate that emissions of toxic air contaminants do not pose a risk to public health and safety.

- A description and analysis of RACM utilized to control fugitive particulate emissions from each emissions unit and physical operations in the breakout areas. If RACM is/are not currently employed in these unpermitted breakout areas, please submit an engineering study that determines the cost effectiveness of the installation of control measures pursuant to Ohio Engineering Guide #46 (enclosed).

- If the potential emissions from unpermitted breakout area emissions units and physical operations exceed Prevention of Significant Deterioration thresholds for any criteria pollutant, include an evaluation

including appropriate modeling and Best Available Control Technology (BACT) analysis. If the potential emissions from any of the breakout area emissions units and physical operations exceed Non-Attainment New Source Review thresholds, then include an evaluation including appropriate modeling and Lowest Achievable Emissions Rate (LAER) analysis.

- Any and all assumptions, calculations, citations, references, and guidance utilized when completing any of the above forms and information. Any assumptions should be documented and supported by citations of appropriate literature (ex, AP-42 chapter including section and table number, CERP Study numbers with table and section citations, guidance documents including section and/or table/figure citations, or other technical journals), manufacturer's data (provide copies of this data on manufacturer letterhead or copies of the operating manual), emissions testing data, or engineering studies including calculations.

In addition, please submit a compliance plan specifying how CSC will achieve and maintain the compliance with OAC rule 3745-17-08 and any other applicable rules. Please include a description of how compliance will be demonstrated, what specific physical improvements will be made, and when the project will be completed. This information may be included in the engineering study pursuant to Ohio Engineering Guide #46 as requested above.

Also, submit an updated Preventive Maintenance and Malfunction Abatement Plan that addresses capture hooding, enclosures and equipment utilized to achieve the required capture efficiencies and fugitive particulate emissions limitations from the unpermitted breakout areas. In addition, this revision should include measures that CSC will implement to ensure that the required capture efficiency will be maintained.

2. **Findings:** P901: electric arc furnace #1 vented to baghouse B-3216
P902: electric arc furnace #2 vented to baghouse B-3216

On June 29, 2009, electric arc furnace #1 (P901) was observed in operation by Ohio EPA staff. Operation of this furnace occurred only during third shift (night time) during this inspection period. Observations during the melting and refining stages of the heat indicated that capture of emissions generated in these portions of the melt cycle by the melt hood and associated emissions capture equipment appeared adequate. Inspectors noted that the 4th hole opening for emissions unit P902 (not operating at that time) was covered with a metal blank, apparently to improve draw

for emissions unit P901. It was unclear if emissions capture would continue to be sufficient if both furnaces had been operating or had the blank not been in place during this compliance evaluation.

Observations during furnace charging and tap indicated that the draw into both the melt and tap hoods appeared inadequate to capture fugitive emissions during these stages of the process. CSC has stated in conversations following the inspection that they are adding a fourth fan and reengineering the ductwork to improve airflow from the furnaces to the baghouse.

Emissions unit P902 was not operating during this inspection. The facility is required to test emissions units P901 and P902 when operating at the same time in order to satisfy the testing requirements set forth in 40 Code of Federal Regulations Part 63, Subpart EEEEE in accordance with the National Stack Testing Guidance (issued 2005) for testing under normal, worst-case conditions for an entire furnace cycle. To date, this emissions testing has not been performed.

Additionally the facility has not performed required emissions testing pursuant to 40 Code of Federal Regulations Part 63, Subpart EEEEE for emissions unit P902.

The fume collector baghouse (B-3216) that controls emissions from both P901 and P902 was also inspected on June 19, 2009. Observed pressure drop across each compartment in the positive-pressure baghouse were within the range of 2-8" w.c. required by the Title V permit to operate. There were fugitive emissions observed from some conduit lines and damper arm dust shrouds in the baghouse that controlled cleaning cycle reverse-air dampers. The magnitude of these fugitive emissions was difficult to quantify due to poor lighting conditions. CSC personnel notified maintenance of this issue immediately in order to initiate repairs.

It was not possible to observe the baghouse exhaust vent for visible particulate emissions at this time due to darkness. During the night time June 29 - 30, 2009 inspection, Ohio EPA inspectors asked how the facility satisfied the requirement to perform visible emissions checks on baghouse vent when it is dark outside. Facility personnel stated that they did not have a procedure in place to do this. The same issue exists with the restriction on emissions of fugitive dust from building egress points in the Title V permit-to-operate when operations occur only at night. The records collected on September 22, 2009 indicate that the daily VE inspections are being performed.

The Title V permit requires the following

> *"The permittee shall perform daily checks, when the emission unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:*
>
> *a. the color of the emissions;*
> *b. the total duration of any visible emissions incident; and*
> *c. any corrective actions taken to eliminate the visible emissions."*

**Violations:**

Failure to adequately capture and control fugitive emissions of dust at the point of generation is considered a violation of OAC rule 3745-17-08(A) and the terms and conditions of the Title V permit to operate. Violations of the terms and conditions of a Title V permit are also considered violations of ORC 3704.05(J)(2), which states

> *"[no] person shall...[v]iolate any applicable requirement of a Title V permit or any permit condition...".*

Failure to perform emissions testing on P902 and concurrent operation of P901 and P902 as required by 40 CFR 63, Subpart EEEEE is considered a violation of 40 CFR Part 63, Subpart EEEEE.

Ohio is unable to assess compliance and CSC is unable to demonstrate compliance with visible particulate emissions limitations from the baghouse vent and building egress points when operations only occur at night. Therefore compliance with OAC rule 3745-17-07(A), 3745-17-07(B) and the Title V permit are unknown.

**Requested Actions:**

Ohio EPA requests that Columbus Castings initiate and complete a repair of the leaking baghouse conduits and damper arm dust shrouds to prevent fugitive dust from the baghouse from becoming airborne and maintain a record of this repair on-site for review by Ohio EPA personnel. Additionally, Ohio EPA requests that CSC incorporate inspection of the baghouse valves, damper covers, and other dust shrouds into the existing PMMAP.

Ohio EPA requests that the facility submit a plan and schedule within 30 days of receipt of this letter that clearly explains how the facility will demonstrate compliance

with the requirements of OAC rule OAC rule 3745-17-07(A), 3745-17-07(B) and the Title V permit. This compliance plan may involve the installation of additional monitoring equipment on the baghouse.

Additionally Ohio EPA requests that CSC explain how daily VE data during furnace operations are collected, as indicated by daily records kept by CSC, when the facility personnel have explained that operations only occur at night. Please submit this explanation within 30 days of receipt of this letter.

3. **Findings**: P046: Pepset Core Machine #1 vented to baghouse B-3813

On June 18, 2009, the Pepset Core Machine #1 (P046) and associated equipment (sand bins, mill) were observed in operation by Ohio EPA staff. Enclosures and hooding appeared adequate to capture fugitive emissions in accordance with the Title V permit during this site inspection. No fugitive emissions were observed coming from the sand bins or the associated sand mill during operation. It is unknown if sand transfer occurred during the site inspection. The muller arm was observed while operating, and no fugitive particulate emissions were observed at that time.

The Title V permit and applicable PTI specify that emissions must be vented to baghouse B-3657. During the site visit, Ohio EPA discovered that P046 has independent sand bins from other Pepset mixers and that the emissions are directed to baghouse B-3813, not B-3657. Baghouse B-3818 was inspected on June 24, 2009 and had a pressure drop of 2.7" w.c. The facility profile in the Ohio EPA E business center, Air Services does not indicate either baghouse associated with this process.

**Requested Action**:

Please re-examine the existing control equipment for this emissions unit, as currently configured, along with the equipment referenced in the applicable PTI, Title V, and Air Services. If necessary, please submit an application to modify to the applicable PTI and ensure the correct baghouse is referenced in the current Air Services Facility Profile.

4. **Findings:** P047: Pepset Core Machine #2 vented to baghouse B-3657
P048: Pepset Core Machine #3 vented to baghouse B-3657

On June 18, 2009, P047 and P048 were inspected by Ohio EPA staff. P047 was operating during this inspection, and enclosures and hooding appeared adequate to

capture fugitive emissions in accordance with the Title V permit. No fugitive emissions were observed coming from the sand bins or the associated sand mill during operation. It is unknown if sand transfer occurred during the site inspection. The muller arm was observed while operating, and no fugitive particulate emissions were observed at that time.

P048 was not operating during the June 18, 2009 compliance inspection.

Shortly after observing P047 in operation, Ohio EPA staff inspected baghouse B-3657. This baghouse is required by the Title V permit to capture and control particulate emissions from P047 and P048, and was operating at 1.6" w.c. during the inspection. This was outside of the permitted pressure drop range of 2-8" w.c. in the effective Title V permit to operate.

The Title V permit requires that:

> *"The pressure drop across baghouse B-3657 shall be maintained within the range of 2-10 inches of water while the emissions unit is in operation."*

**Violations:**

Operation of a control device outside of the allowable range in the Title V permit is considered a violation of the terms and conditions of the Title V permit. Violations of the terms and conditions of a Title V permit are also considered violations of ORC 3704.05(J)(2).

**Actions:**

Ohio EPA requests that Columbus Castings initiate and complete repair and maintenance of the baghouse in order to ensure that the pressure drop is maintained within the permitted range and maintain a record of this repair and maintenance on-site for review by Ohio EPA personnel.

5. **Findings:** P049: Pepset Core Machines #4 vented to baghouse B-3657
P051: Pepset Core Machines #6vented to baghouse B-3657
P052: Pepset Core Machines #7 vented to baghouse B-3657

Prior to the June 18, 2009 compliance inspection, emissions units P049, P051, and P052 had been permanently shut down and removed from the facility.

6. **Findings:** P053: Cold Box Core Machine 1 vented to Dakota wet acid scrubber B-3897 and baghouse B-3700
P056: Cold Box Core Machine 2 vented to Dakota wet acid scrubber B-3897 and baghouse B-3700
P057: Cold Box Core Machine 3 vented to Dakota wet acid scrubber B-3897 and baghouse B-3700

Emissions unit P053 is permitted under PTI 01-08082 and the current Title V permit. Emissions units P056 and P057 were permitted in PTI 01-08896. Neither P056 nor P057 were included in the current Title V permit in 2002 because they were installed following issuance of the Title V. All three emissions units perform the same process operation and vent volatile organic compound emissions to the common wet acid scrubber (B-3897) and particulate emissions to baghouse (B-3700).

During the June 4, 2009 site visit, CDO personnel observed emissions unit P053 in operation. No visible fugitive emissions were observed from the indoor sand storage silos or the pneumatic sand handling system associated with this emissions unit. There was not a noticeable odor present from catalyst use when the emissions unit was operating.

CDO personnel observed that the wet scrubber associated with P053 was operating and parametric readings were taken at that time. The scrubber pH was reading 2.2, and the scrubber flow rate was 123 gallons per minute. The catalyst currently used in this emissions unit is dimethylisopropylamine (DMIPA) [UN 2733], and this was confirmed by CDO inspectors.

During the June 15, 2009 site visit, CDO personnel observed both emissions units P053 and P056 operating. No visible fugitive emissions were observed from the indoor sand storage silos or the pneumatic sand handling system associated with emissions unit P056 during this inspection. There was a catalyst odor present in the area but this odor could not be clearly attributed to P056 because a scrap core hopper was located immediately beside the emissions unit.

CDO is unable to determine if the permitted capture efficiency was being achieved without emissions testing demonstrating compliance with the terms and conditions of issued permits. Ohio EPA requested this testing be performed in the June 1, 2007, Notice of Violation. To date Ohio EPA has not received notification of a scheduled emission test.

CDO personnel again observed the wet scrubber in operation during the June 15, 2009, site visit. The scrubber pH was 3.3 and the flow rate was 123 gallons per

minute. The pressure drop across the scrubber system was 5.4" w.c. and the pressure drop across the scrubber itself was 1.4" w.c. This is outside the pressure drop range required in the Title V permit-to-operate and PTI 01-08896.

In April 2007, CSC modified emissions unit P053, P056, and P057 by changing the catalyst from triethylamine (TEA) to DMIPA. Columbus Steel Castings filed for a modification of the permits associated with emission units P053, P056, and P057 on October 5, 2009 to reflect this change in operation. Ohio EPA is currently reviewing this permit application.

**Violations:**

Operation of the wet scrubber outside of the allowable pressure drop range is considered a violation of the terms and conditions of the Title V permit to operate, Permit-to-Install 01-08896, ORC 3704.05(C), and ORC 3704.05(J)(2).

**Requested Actions:**

Ohio EPA requests that Columbus Castings initiate and complete repair of the Dakota wet acid scrubber in order to ensure that the pressure drop is maintained within the permitted range and maintain a record of this repair on-site for review by Ohio EPA personnel.

Ohio EPA requests that CSC submit a plan and schedule to perform VOC emissions and control efficiency testing on emissions units P053, P056 and P057 while using DMIPA as a catalyst within 30 days of receipt of this letter. This plan should include specific dates and milestones necessary to complete emissions testing in a manner acceptable to Ohio EPA, and should specify that the emissions testing will be completed no later than 90 days from receipt of this letter.

Please evaluate the calibration and maintenance schedule of the pH probe and associated meter in accordance with the manufacturers specifications. Additionally please incorporate regular calibration checks of this monitoring equipment into the existing, approved PMMAP.

7. **Findings:** P033: National Sand Dryer (B-2790) vented to baghouse B-3597

On June 4, 2009, the B-2790 National Sand Dryer (P033) was observed in operation by Ohio EPA staff. Enclosures and hooding were not sufficient to capture fugitive emissions in accordance with the requirements of the effective Title V permit-to-

operate. Specifically, fugitive particulate emissions were being emitted from the "pill bin" and from several storage bins associated with this emissions unit. In addition, the sand dryer was being operated in such a manner that the fluidized bed was pressurized, which resulted in particulate emissions being blown out of a transfer line that should have been under vacuum. Fugitive particulate emissions from this transfer line were sufficient to obscure other parts of the sand dryer from additional observation.

Subsequent observations made on June 15, 2009 and June 18, 2009 indicated that the previous observed violations were ongoing. CSC personnel indicated that a constant cloud of dust being blown from piping above the emission unit was a difficult fix and would be addressed as part of the Phase 2 Environmental Audit. Ohio EPA repeatedly indicated their concerns about this operation and the ongoing violation. The Phase 2 Environmental Audit submitted on August 21, 2009 did not fully evaluate or recommend any immediate improvements to this emissions unit that would correct the ongoing violation. CSC personnel indicated in conversations following the inspection that this emissions unit and emissions unit P905 may be replaced by a new sand dryer, among other changes at the facility.

On June 15, 2009, Ohio EPA personnel inspected baghouse B-3597 while emissions unit P033 was operating. This control device was operating within the permitted pressure drop range in the effective Title V permit. However, CSC personnel informed Ohio EPA that the draw from the baghouse was only about 8,500 cubic feet per minute (CFM), rather than 14,000 CFM for which the baghouse was designed.

The effective Title V permit requires the following:

> *"The permittee shall eliminate visible emissions of fugitive dust through the employment of RACM, in accordance with the RACM report submitted on February 4, 1991. These measures shall include, but not be limited to, the following:*
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> *i. the use of hooding, in RACM area 19, at the sand conveyors and elevators and the use of enclosures at the storage bins and mill to achieve a minimum 99% capture efficiency of potential emissions of fugitive dust; and*
>
> *ii. all fugitive dust captured within the RACM area shall be vented to the baghouse B-3597.*

> *By employing the above-mentioned RACM, there shall be no visible emissions of fugitive dust from any non-stack egress point from the building housing RACM area 19, including, but not limited to: doorways, windows and roof openings."*

The methods of minimizing emissions specified in the RACM area 19 analysis that Buckeye Steel Castings provided to Ohio EPA as a means of complying with OAC rule 3745-17-08(B) are not being followed. The applicable RACM study specified methodologies, equipment, capture equipment, capture efficiencies, control equipment, control efficiencies and work practices necessary to comply with OAC rule 3745-17-08(B). During the site visits CSC was not operating equipment in a manner that complies with OAC rule 3745-17-08(B).

Further, CSC was required to perform emissions testing on emissions unit P033 within six (6) months prior to the expiration date of the Title V permit (between June 18 and December 18, 2007). No Ohio Intent to Test form or emissions test report has been received by Ohio EPA for this emissions unit since April, 2004. Ohio EPA cannot determine if CSC is in compliance with the allowable particulate mass emissions rate for this emissions unit without a current, valid emissions test.

**Violations:**

Not eliminating visible fugitive particulate emissions in accordance with the effective Title V permit is considered a violation of the terms and conditions of the Title V permit. Violations of the terms and conditions of a Title V permit are also considered violations of ORC rule 3704.05(J)(2).

Failure to properly capture and control fugitive particulate emissions constitutes a violation of OAC rule 3745-17-08(B).

Failure to perform emissions testing as required by the effective Title V permit is considered a violation of the terms and conditions of the effective Title V permit. Violations of the terms and conditions of a Title V permit are also considered violations of ORC rule 3704.05(J)(2).

**Requested Actions:**

Ohio EPA requests that CSC perform repairs and maintenance on emissions unit P033 sufficient to comply with the effective Title V permit-to-operate and state and federal regulations. These repairs should be completed within 90 days of receipt of

this letter and a record of the repairs should be maintained on-site for review by Ohio EPA personnel.

Ohio EPA requests that CSC submit a compliance plan and schedule to complete the emissions testing required under the effective Title V permit within thirty days of receipt of this letter. This plan should include specific dates and milestones necessary to complete emissions testing in a manner acceptable to Ohio EPA, and should specify that the emissions testing will be completed no later than 90 days from receipt of this letter.

Be aware that any changes, modifications or upgrades may be considered or result in a "modification" to other emissions units and air contaminant sources. Ohio EPA requests that CSC submit permit applications for these emissions units or any affected air contaminant sources prior to making process modifications or improvements.

8. **Findings:** P904: 3F Mill and Four Storage Silos vented to baghouse B-3820

On June 4, 2009, the 3F Mill (P904) was observed in operation by Ohio EPA staff. Excessive fugitive emissions were observed coming from the mill enclosure when the emissions unit and control device were starting operation for approximately five minutes. The mill enclosure appeared sufficient to control emissions of fugitive dust after that time had elapsed.

Ohio EPA inspectors also observed the baghouse that controls emissions from the 3F mill (B-3820) while the emissions unit was operating. Observed pressure drop across each baghouse compartment was within the allowable range permitted in the Title V permit to operate.

**Requested Actions:**

Ohio EPA requests that prior to starting the 3F mill and adding material that the baghouse be operating for a sufficient length of time to control visible particulate emissions from the mill enclosure.

9. **Findings:** F006: 1693 Mold Making and Sand Preparation

This emissions unit was not observed in operation during this compliance evaluation.

10. **Findings:** F007: 1693 Mold Pouring and Cooling

This emissions unit was not specifically observed during this compliance evaluation.

11. **Findings:** P012: 1693 Shakeout vented to scrubber B-3032

On June 24, 2009, the 1693 Shakeout (P012) was observed in operation by Ohio EPA staff. The side draft hoods associated with this emissions unit were not sufficient to capture fugitive particulate emissions from the shakeout process. Specifically, during operation of the P012, excessive fugitive emissions were observed traveling upwards in front of the collection hoods with no apparent draw into the hoods that would indicate capture of any of the emissions.

The effective Title V permit states the following:

> *"The permittee shall eliminate visible emissions of fugitive dust through the employment of RACM, in accordance with the RACM report submitted on February 4, 1991. These measures shall include, but not be limited to, the following:*
>
> *i. the use of side draft hoods in RACM area 13 (shakeouts), to achieve a minimum 60% capture efficiency of potential emissions of fugitive dust; and*
>
> *ii. all fugitive dust captured within the RACM area shall be vented to the wet scrubber B-3032, which shall achieve an outlet loading of not greater than 0.030 grain of particulate emissions per dry standard cubic foot of exhaust gases or no visible particulate emissions from the scrubber exhaust stack, whichever is less stringent.*
>
> *By employing the above-mentioned RACM, there shall be no visible emissions of fugitive dust from any non-stack egress point from the building housing RACM area 13, including, but not limited to: doorways, windows and roof openings."*

The methods of minimizing emissions specified in the RACM area 13 analysis that Buckeye Steel Castings provided to Ohio EPA as a means of complying with OAC rule 3745-17-08(B) are not being followed. The applicable RACM study specified methodologies, equipment, capture equipment, capture efficiencies, control equipment, control efficiencies and work practices necessary to comply with OAC

rule 3745-17-08(B). During this site visit CSC was not operating equipment in a manner that complies with OAC rule 3745-17-08(B).

Further, CSC was required to perform emissions testing on emissions unit P012 within six (6) months prior to the expiration date of the Title V permit (between June 18 and December 18, 2007). No Ohio Intent to Test form or emissions test report has been received by Ohio EPA for this emissions unit since July 2005. Ohio EPA cannot determine if CSC is in compliance with the allowable particulate mass emissions rate for this emissions unit without a current, valid emissions test.

**Violations:**

Not employing RACM is considered a violation of the terms and conditions of the effective Title V permit. Violations of the terms and conditions of a Title V permit are also considered violations of ORC rule 3704.05(J)(2).

Failure to properly capture and control fugitive particulate emissions is considered a violation of OAC rule 3745-17-08(B). Violations of OAC rule 3745-17-08 are also considered violations of ORC 3704.05(A).

Failure to perform emissions testing as required by the effective Title V permit is considered a violation of the terms and conditions of the effective Title V permit and ORC 3704.05(J)(2).

**Actions:**

Ohio EPA requests that CSC perform repairs and maintenance on emissions unit P012 and its associated capture and collection systems sufficient to comply with the effective Title V permit-to-operate and state and federal regulations. These repairs should be completed within 60 days of receipt of this letter and a record of the repairs should be maintained on-site for review by Ohio EPA personnel.

Ohio EPA requests that CSC submit a compliance plan and schedule to complete the emissions testing required under the effective Title V permit within thirty days of receipt of this letter. This plan should include specific dates and milestones necessary to complete emissions testing in a manner acceptable to Ohio EPA, and should specify that the emissions testing will be completed no later than 90 days from receipt of this letter.

12. **Findings:** P011: 2600 Moldmaking and Sand Preparation vented to wet scrubber B-3033, baghouse B-3330 and an unidentified baghouse

On June 24, 2009, P011 was observed in operation by Ohio EPA staff. During observation of this emissions unit and associated equipment, Ohio EPA staff witnessed excessive fugitive dust from loading material into the feed hopper and at various transfer points. Capture hoods, including a new emissions capture hood installed since the previous inspection cycle, and control equipment were insufficient to capture and control emissions of fugitive particulate matter in accordance with the Title V permit.

The effective Title V permit states the following:

> *"The permittee shall eliminate visible emissions of fugitive dust through the employment of RACM, in accordance with the RACM report submitted on March 29, 1991. These measures shall include, but not be limited to, the following:*
>
> *i. the use of hooding in RACM area 27 (2 coremaking and 1 moldmaking), to achieve a minimum 85% capture efficiency of potential emissions of fugitive dust; and*
>
> *ii. the use of enclosures in RACM area 28 (screen, sand cooler, magnetic separator and conditioner) to achieve a minimum 98% capture efficiency of potential emissions of fugitive dust; and*
>
> *iii. all fugitive dust captured within the RACM area shall be vented to the wet scrubber B-3033 and baghouse B-3330, which shall achieve an outlet loading of not greater than 0.030 grain of particulate emissions per dry standard cubic foot of exhaust gases or no visible particulate emissions from the scrubber exhaust stack, whichever is less stringent.*
>
> *By employing the above-mentioned RACM, there shall be no visible emissions of fugitive dust from any non-stack egress point from the building housing RACM areas 27 and 28, including, but not limited to: doorways, windows and roof openings."*

The methods of minimizing emissions specified in the RACM areas 27 and 28 analysis that Buckeye Steel Castings provided to Ohio EPA as a means of

complying with OAC rule 3745-17-08(B) are not being followed. The applicable RACM study specified methodologies, equipment, capture equipment, capture efficiencies, control equipment, control efficiencies and work practices necessary to comply with OAC rule 3745-17-08(B). During this site visit CSC was not operating equipment in a manner that complies with OAC rule 3745-17-08(B).

Control equipment associated with P011 rotoconditioners was observed during this inspection. The pressure drop across the baghouse B-3330 was observed to be 3.1" w.c., which was within the permitted pressure drop range in the Title V permit of 1-8" w.c.

Further, CSC was required to perform emissions testing on emissions unit P011 within six (6) months prior to the expiration date of the Title V permit (between June 18 and December 18, 2007). No Ohio Intent to Test form or emissions test report has been received by Ohio EPA for this emissions unit since June 2005. Ohio EPA cannot determine if CSC is in compliance with the allowable particulate mass emissions rate for this emissions unit without a current, valid emissions test.

Ohio EPA observed the B-3033 scrubber and found it to be operating within specified parameters, however the indicator gauges that read the feed water pressure and the differential pressure are subject to plugging if the system contains excessive sludge in the scrubber water. Ohio EPA staff noted that the pressure indicators appeared to be stuck and not reading a variable pressure as would be expected during normal operation of a dynamic system. CSC has indicated to OEPA during meetings that the sludge conveyor had ceased to operate properly. CSC has stated that the scrubber is scheduled to be replaced and the associated sand handling systems would be upgraded due to the inability of the system to operate within the permit allowable emission rates.

**Violations:**

Not employing RACM in accordance with the existing Title V permit is considered a violation of the terms and conditions of the Title V permit and ORC rule 3704.05(J)(2).

Failure to properly capture and control fugitive particulate emissions constitutes a violation of OAC rule 3745-17-08(B) and the terms and conditions of the Title V permit to operate. Violations of the terms and conditions of a Title V permit are also considered violations of ORC 3704.05(J)(2).

Failure to perform emissions testing as required by the effective Title V permit is considered a violation of the terms and conditions of the effective Title V permit and ORC 3704.05(J)(2).

**Requested Actions:**

Ohio EPA requests that CSC perform repairs and maintenance on emissions unit P012 and its associated capture and control equipment sufficient to comply with the effective Title V permit-to-operate and state and federal regulations. These repairs should be completed within 30 days of receipt of this letter and a record of the repairs should be maintained on-site for review by Ohio EPA personnel.

Be aware that any changes, modifications or upgrades may be considered or result in a "modification" to other emissions units and air contaminant sources. Ohio EPA requests that CSC submit permit applications for these emissions units or any affected air contaminant sources prior to making process modifications or improvements.

Ohio EPA requests that CSC submit a compliance plan and schedule to complete the emissions testing required under the effective Title V permit within thirty days of receipt of this letter. This plan should include specific dates and milestones necessary to complete emissions testing in a manner acceptable to Ohio EPA, and should specify that the emissions testing will be completed no later than 90 days from receipt of this letter.

13. **Findings:** F008: 2600 Pouring and Cooling

On July 28, 2009, F008 was observed in operation by Ohio EPA staff. Specifically, cooling molds were observed but pouring had been completed for the day.

14. **Findings:** F005: Moldmaster Mold making (Insignificant in Title V)
P009: Moldmaster Mold making and Sand Prep vented to baghouse 3700

On July 28, 2009, F005 and F009 were observed while operating by Ohio EPA staff. Some minor emissions of fugitive dust were observed from sand transfer/conveying equipment and silo bin vents.

**Requested Actions:**

No further action is requested at this time as a result of this compliance evaluation.

15. **Findings:** F009: Moldmaster Pouring and Cooling

On June 29, 2009, Ohio EPA personnel observed Moldmaster Pouring and Cooling operations following P901 furnace tap. Mold pouring resulted in visible emissions of fugitive dust, smoke and/or fumes. Observations could not be made outside the building because it was dark outside. The facility did not employ wall fans above the pouring floor to vent fresh air into the plant during pouring operations. In addition the facility is unable to demonstrate compliance with the fugitive visible emissions limitations in the Title V permit because these pouring operations are currently taking place on 3rd shift (night time).

Some molds also were observed to autoignite once they were poured. For safety reasons, OEPA staff could not determine if the autoignition was sufficient to be in compliance with the Requirements of 40 CFR 63, Subpart EEEEE.

The effective Title V permit requires the following for emissions unit P009:

> "*The permittee shall eliminate visible emissions of fugitive dust through the employment of RACM, in accordance with the RACM study report received August 30, 1990 and a subsequent June 26, 1992 letter to Ohio EPA, Central District Office. These measures shall include, but not be limited to, the following:*
>
> *i. the moldmaster pouring and cooling floor shall be adequately enclosed to eliminate visible emissions of fugitive dust from doors, widows, and roof monitors during pouring operations; and*
>
> *ii. wall fans above the pouring floor shall vent fresh air from outside into the plant during pouring operations to eliminate visible emissions of fugitive dust from these egress points.*
>
> *By employing the above-mentioned RACM, there shall be no visible emissions of fugitive dust from any non-stack egress point from the building housing RACM area 5, including, but not limited to: doorways, windows and roof openings.*"

**Actions:**

No further action is requested at this time as a result of this compliance evaluation.

16. **Findings:** P906: Moldmaster Casting Processing System (including manipulator arm, wheelabrator shotblast and burn booths) vented to baghouses B-3700, B-3639, B-3640 and B-3820

P908: Moldmaster Punchout/Shakeout Area (include B-3278 lumpbreaker) vented to baghouses B-3700 and B-3639

During the June 2, 4, 18, and July 28, 2009 inspections, the manipulator arm enclosure (considered a part of P906) was observed by Ohio EPA staff. The arm was not operating at these times, but the enclosure was damaged and open to the building. It appeared to have been dismantled or otherwise removed and appeared to be in the same condition as observed during the previous compliance evaluation and incapable of meeting the particulate emissions capture efficiency requirement of 98% capture in PTI 01-08278 and the effective Title V permit to operate.

The effective Title V permit states the following for the Moldmaster Casting Processing System (P906):

> *"The permittee shall eliminate visible emissions of fugitive dust through the employment of best available technology (BAT) in accordance with the PTI application submitted on November 15, 1999. These measures shall include, but not be limited to, the following:*
>
> *i. the use of a partial enclosure, in RACM area 30, around the casting extractor, to achieve a minimum 98% capture efficiency of potential emissions of fugitive dust;*
>
> *ii. the use hooding, in RACM area 30, above the 8 vibratory and belt sand conveyors, to achieve a minimum 90% capture efficiency of potential emissions of fugitive dust;*
>
> *iii. the use of a total enclosure, in RACM area 30, around the Didion sand reclaimer, the monorail shotblaster, and the torch burning station to achieve a minimum 95% capture efficiency of potential emissions of fugitive dust; and*
>
> *iv. all fugitive dust captured within the RACM area shall be vented to baghouses B-3700, B-3639 and B-3640.*
>
> *By employing the above-mentioned RACM, there shall be no visible emissions of fugitive dust from any non-stack egress point from the*

*building housing RACM area 30, including, but not limited to: doorways, windows and roof openings."*

During the June 4, 2009 inspection, Ohio EPA staff observed the sand lump breaker (B-3278) operating. The sand lump breaker is part of RACM Area 9, which is considered part of emissions unit P908, and is vented to baghouse B-3700. Ohio EPA staff observed excessive fugitive emissions from the sand lump breaker in conjunction with no observed fugitive emissions capture at any pick-up points.

CDO inspectors also observed the pressure drop across each compartment of baghouse B-3700, and found that each compartment was in compliance with the permitted pressure drop range in the effective Title V permit-to-operate. Therefore, the emissions capture system is not functioning correctly to capture emissions in accordance with the effective Title V permit-to-operate and 3745-17-08(B).

During the September 22, 2009, records inspection, CSC staff informed OEPA staff that the enclosure for P908 had been severely compromised above the punchout several years ago during a major equipment installation. Further, the compromised enclosure had not been repaired until recently during the required repairs under the API. While the unit was not operating extracting parts during the 2009 site visit, previous observations made during the 2007 evaluation noted a lack of proper capture on this operation.

On June 18, 2009, Ohio EPA observed the loading of bolsters from a pile outside the enclosure to the conveyor. This operation demonstrated a general lack of capture by the manipulator arm enclosure. Additionally there was significant uncaptured dust produced by the transfer of the bolster from the vibratory conveyor attached to the manipulator arm enclosure to the cooling conveyor leading to the torch stations. The P906 PSD evaluation associated with permit application 01-2520 stated that capture would be accomplished by keeping parts within the enclosure and not placing them on the ground, this procedure is not being followed.

CSC was required to perform emissions testing on emissions units P906 and P908 within six (6) months prior to the expiration date of the Title V permit (between June 18 and December 18, 2007). No Ohio Intent to Test form or emissions test report has been received by Ohio EPA for emissions units P906 since March 2005 and for P908 since April 2005. Ohio EPA cannot determine if CSC is in compliance with the allowable particulate mass emissions rate for these emissions units without a current, valid emissions test.

**Violations:**

Not achieving specified capture efficiencies specified in PTI 01-08278 (for P906) and the existing Title V permit (for P906 and P908) are considered violations of ORC rule 3704.05(C) which states that

> *"[no] person who is a holder of a permit issued under division (F) or (G) of section 3704.03 of the Revised Code shall violate any of its terms and conditions."*

In addition, the capture efficiencies specified in applications and issued permits for PTI 01-2520, in 1990, and 01-08278, in 2002, were used to avoid the applicability of PSD (for P906). As such, by not achieving said capture efficiencies, Columbus Steel Castings is in violation of OAC rule 3745-31-21(A) which states that

> *"[no] owner or operator of a major stationary source or major modification located in a non-attainment area shall begin actual construction of such major stationary source or major modification unless, as a minimum, the requirements in rules 3745-31-21 to 3745-31-27 of the Administrative Code have been met and the owner or operator of the stationary source has obtained a valid Ohio Environmental Protection Agency Permit-to-Install."*

Failure to properly capture and control fugitive particulate emissions constitute a violation of OAC rule 3745-17-08(B)(1) which requires that

> *"[no] person shall cause or permit any fugitive dust source to be operated...without taking reasonably available control measures to prevent fugitive dust from becoming airborne."*

Failure to perform emissions testing for emissions units P906 and P908 is considered a violation of the terms and conditions of the effective Title V permit-to-operate. Violation of the terms and conditions of a Title V permit are also considered a violation of ORC 3704.05(J)(2).

**Actions:**

Ohio EPA requests that CSC perform repairs and maintenance on emissions unit P906 sufficient to comply with the effective PTI, Title V permit-to-operate, and state and federal regulations. These repairs should be completed within 30 days of receipt of this letter and a record of the repairs should be maintained on-site for review by Ohio EPA personnel.

Ohio EPA requests that CSC perform repairs and maintenance on the P908 lumpbreaker and associated capture and control equipment sufficient to comply with the effective Title V permit-to-operate and state and federal regulations. These repairs should be completed within 30 days of receipt of this letter and a record of the repairs should be maintained on-site for review by Ohio EPA personnel.

Ohio EPA requests that CSC submit a compliance plan and schedule to complete the emissions testing required under the effective Title V permit within thirty days of receipt of this letter. This plan should include specific dates and milestones necessary to complete emissions testing in a manner acceptable to Ohio EPA, and should specify that the emissions testing will be completed no later than 90 days from receipt of this letter.

17. **Findings:** P905: East End Sand System vented to baghouses B-3306 and B-3552

During the June 2 and June 4, 2009 site visits, CDO inspectors observed pressure drop readings for baghouse B-3552 that were > 10" and 9.6" w.c. which is above the upper range of the permitted pressure drop of 8" w.c.. Also, pressure drop across baghouse B-3306 was 1.6" w.c., which was below the lower range of the permitted pressure drop of 2" w.c. When informed of these deviations, plant personnel made an effort to immediately address them.

On June 15, 2009, CDO staff observed pressure drop across baghouse B-3552 to be 1.6" w.c. which is below the permitted lower range of the permitted pressure drop of 2" w.c. This issue was again brought to the attention of facility personnel who subsequently alerted maintenance staff.

Further, CSC was required to perform emissions testing on emissions units P905 within six (6) months prior to the expiration date of the Title V permit (between June 18 and December 18, 2007). No Ohio Intent to Test form or emissions test report has been received by Ohio EPA for this emissions unit since August 2004. Ohio EPA cannot determine if CSC is in compliance with the allowable particulate mass emissions rate for these emissions units without a current, valid emissions test.

Subsequent conversations with facility personnel indicated that the facility may be replacing emissions units P033 and P905 with a new sand dryer system.

**Violations:**

Pressure drop deviations are considered violations of the effective Title V permit-to-operate. Violations of the terms and conditions of a Title V permit are also considered violations of ORC 3704.05(J)(2).

Failure to perform emissions testing in accordance with the terms and conditions of the effective Title V permit are considered violations of the terms and conditions of the effective Title V permit. Violations of the terms and conditions of a Title V permit are also considered violations of ORC 3704.05(J)(2).

**Actions:**

Ohio EPA requests that CSC perform repairs and maintenance on baghouses B-3552 and B-3306 sufficient to comply with the pressure drop requirements in the effective Title V permit-to-operate and state and federal regulations. These repairs should be completed within 30 days of receipt of this letter and a record of the repairs should be maintained on-site for review by Ohio EPA personnel.

Ohio EPA requests that CSC submit a compliance plan and schedule to complete the emissions testing required under the effective Title V permit within 30 days of receipt of this letter. This plan should include specific dates and milestones necessary to complete emissions testing in a manner acceptable to Ohio EPA, and should specify that the emissions testing will be completed no later than 90 days from receipt of this letter.

Be aware that any changes, modifications or upgrades may be considered or result in a "modification" to other emissions units and air contaminant sources. Ohio EPA requests that CSC submit permit applications for these emissions units or any affected air contaminant sources prior to making process modifications or improvements.

18. **Findings:** P007: Monorail Shotblast (B-2497) vented to baghouse B-3922 (replaced baghouse B-2700)

On June 18, 2009, the Monorail Shotblast was observed in operation by Ohio EPA staff. Enclosures and hooding were sufficient to capture fugitive emissions in accordance with the requirements in the effective Title V permit-to-operate. Visible emissions reading performed on baghouse B-3922 during the inspection indicated that the opacity of emissions from the baghouse stack was less than 20% as a six-minute average.

19. **Findings:** F010: Bolster/Frame/Industrial Finishing

On June 2, 2009, the Bolster/Frame/Industrial Finishing (F010) was observed in operation by Ohio EPA staff. No fugitive emissions were observed leaving the building at this time.

20: **Findings:** P030: Table Shot Blast (B-3121) in Industrial Finishing vented to B-3122

On June 2, 2009 CDO personnel observed the Table Shot Blast, but not in operation. Recent emissions testing (January 10, 2008) indicated that the emissions unit was operating in compliance with the terms and conditions in the Title V permit.

21. **Findings:** K001: Bolster and Frame Rail Painting
K004: Bolster and Frame Paint Line

On June 2, 2009, CDO personnel observed the Bolster and Frame Rail Painting (K001), but not in operation. According to CSC personnel painting in this emissions unit occurs only on third shift. The facility utilizes two different coatings in this emissions unit, both with "as applied" VOC contents below the permitted maximum of 3.5 lbs VOC / gallon in the Title V permit. Ohio EPA inspectors observed overspray on support rails and the floor.

On June 26, 2009, Ohio EPA observed the Bolster and Frame Rail Painting while operating. Paint was being applied to frames using an airless spray system and high-solids, low-VOC paint. Overspray from this operation was apparent, but not unexpected or excessive. Windows in this area were open, but the limited overspray did not appear to be escaping from the building enclosure.

Emissions unit K004 was permanently shut down prior to this compliance inspection.

22. **Findings:** K002: #2 Foundry Paint Booth

On June 29, 2009, the #2 Foundry Paint Booth was observed by Ohio EPA staff. This emissions unit was not in operation at the time of inspection, but the fans for the paint booth were operating. The booth filter had been impacted with significant overspray and had a pressure drop reading of 0.9" w.c. According to facility personnel, the booth operates intermittently and uses approximately 5 to 7 gallons of coating per month. Ohio EPA Staff informed CSC personnel that this reading may be high for a paint booth.

**Requested Actions:**

Ohio EPA recommends that the paint booth filter be changed due to its observed level of overspray.

23. **Findings:** P029: #2 Foundry Room Blast vented to baghouse B-3103

On June 15, 2009, the #2 Foundry Room Blast was observed in operation by Ohio EPA staff. The enclosure around the emissions unit was sufficient to capture fugitive emissions in accordance with the requirements in the effective Title V permit-to-operate. Visible emissions readings performed on baghouse B-3103 during the inspection indicated that the opacity was less than 20% as a six-minute average. Baghouse B-3103 was operating within its allowable pressure drop range of 1-6 inches of water (" w.c.) during the inspection.

24. **Findings:** F002: Coupler Casting Finishing

This emissions unit was not observed in operation during this compliance evaluation.

25. **Findings:** P032: Tumbleblast (B-3332, Pangborn, GN Barrel Blast Cleaning System) vented to baghouse B-3334

On June 24, 2009, the tumbleblast (P032) was observed in operation by Ohio EPA staff. No fugitive emissions were observed from the tumbleblast enclosure during operation. The pressure drop on the baghouse (B-3334) controlling emissions from this unit was 5.1" w.c, which was within the Title V permitted operating range of 2-8" w.c. Testing for particulate emissions from this emissions unit was performed in December, 2007 and demonstrated compliance with the particulate emissions limitation in the Title V permit to operate.

26. **Findings:** P041: Air Arc Turntables (B-3658, B-3659, B-3656) vented to baghouse B-3656

On June 24, 2009, the Air Arc Turntables (P041) were observed in operation by Ohio EPA staff. During this inspection, only one table was operating and the draw from the baghouse appeared sufficient to capture fugitive emissions from the process. The pressure drop on the baghouse (B-3656) controlling emissions from this unit was 9.5" w.c. Testing for particulate emissions from this emissions unit was performed in March, 2008 and demonstrated compliance with the particulate emissions limitation in the Title V permit to operate. No opacity from the baghouse exhaust stack was observed in excess of 20% as a six-minute average.

During this inspection, Ohio EPA personnel observed a fourth operational air arc turntable. CSC staff explained that the fourth turntable is vented to the same baghouse, and is not reflected in the applicable Title V permit and has not received a PTI.

**Violation:**

Failure to obtain an appropriate PTI prior to installation of a new source constitutes a violation of OAC rule 3745-31-02(A)

**Requested Actions:**

Ohio EPA requests that CSC submit a PTI application and appropriate EAC form for the new emissions unit or to modify the existing PTI along with any and all assumptions, calculations, citations and guidance utilized when completing any of the above forms and information submitted. This application should be submitted within 30 days of reciept of this letter.

27. **Findings:** Annealing Furnaces in Industrial Finishing (Department 39)
P020 – B-1206 (No. 6 Annealing Furnace)
P043 – B-3847 (No. 3 Heat Treat Furnace)
P044 – B-3848 (No. 4 Heat Treat Furnace)
P024 – B-2760 (No. 11 Annealing Furnace)
P023 – B-2464 (No. 10 Annealing Furnace)
P021 – B-2575 (No. 8 Annealing Furnace)
P022 – B-2576 (No. 9 Annealing Furnace)

Annealing Furnaces in Coupler Building (Department 04)
P016 – B-2027 (South Holcroft Oven)
P017 – B-2674 (North Holcroft Oven)
P018 – B-1507 and B-1514 (East and West Annealing Furnaces)

Annealing Furnace in #2 Foundry (Department 49)
P042 – B-3120 (#2 Foundry Heat Treat Furnace)

During the June 2 and June 15, 2009, site visits, CDO personnel observed these annealing furnaces and noted that they were in different stages of running or make-ready. The permittee uses only natural gas as fuel in these emissions units. Ohio EPA did not observe the presence of any burner nozzle tips nor was the capability for flue gas recirculation present. The absence of engineered nozzle tips or flue gas

recirculation indicated that they are likely not low NOx burners, as claimed by PTI applications.

Additionally, It appears that CSC has calculated the PTE for the furnaces utilizing an emission factor for low NOx burners for natural gas fired boilers.

Documentation provided by CSC indicates that furnaces P043, P042, and a third furnace identified as either P024 or P061, or other identification, were installed without assessing the applicability of New Source Review, as defined in OAC rule 3745-31 and 40 CFR Part 52.21. OAC rule 3745-31 and 40 CFR Part 52.21(b)(23)(i) defines a significant increase as a project with the potential emissions of greater than or equal to 40 tons per year. Based on the emission factor for a natural gas fired annealing furnace without controls (AP 42 Table 12.5.4), the potential emissions of NOx from these furnaces may have exceeded 40 tons per year.

**Violations:**

Be aware, CSC may have failed to obtain an appropriate PTI prior to installation of a major modification constitutes a violation of OAC rule 3745-31-21(A) which states that

> *"No owner or operator of a major stationary source or major modification located in a nonattainment area shall begin actual construction of such major stationary source or major modification unless, as a minimum, the requirements in rules 3745-31-21 to 3745-31-27 of the Administrative Code have been met and the owner or operator of the stationary source has obtained a valid Ohio Environmental Protection Agency Permit-to-Install."*

**Requested Actions:**

Ohio EPA requests that CSC conduct emissions testing to determine appropriate NOx and CO emissions factors, in terms of lbs pollutant/MMBTU, for these furnaces. Testing should conform to U.S. EPA methods 7E and 10. Please submit appropriate ITT forms within 30 days of receipt of this letter and test within 60 days of initial ITT submittal.

If emissions testing indicates that Major NSR was triggered, then Ohio EPA requests appropriate permit applications be submitted within 120 days of receipt of this letter or 60 days following completion of testing, whichever is more stringent.

28. **Findings:** P907: Chromite/Silica Sand Separator vented to baghouse B-3657

Ohio EPA was notified that this emission unit was permanently shut down on October 31, 2007.

29. **Findings:** Cup Machine (insignificant emissions unit Z013 in Title V permit)

On June 18, 2009, the cup machine (Z013) was observed in operation by Ohio EPA staff. This emissions unit utilized phenolic resin coated core sand in a heated die to produce "cups". Finished cups were utilized as funnels to pour molten steel into molds during pouring operations. According to CSC personnel, the machine uses approximately one ton of sand per day to produce approximately 250 cups. This emissions unit was installed in 1989, and the facility did not apply for a permit-to-install for this emissions unit. Also, CSC personnel indicated that there was an additional, smaller shell sand coremaking operation located adjacent to this emissions unit. This smaller operation was not operating at the time of this inspection.

Observations indicated that as the sand was compressed in the heated die, there were emissions of fume and smoke from the direct contact of the coated sand with the die. Additional smoke and fume were emitted from the finished cup after removal from the machine and from spraying the die with mold release after producing each cup.

**Violation:**

Failure to "*install and use hoods, fans, and other equipment to adequately enclose, contain, capture, vent and control...fugitive dust*" is considered a violation of OAC rule 3745-17-08(B). Violation of OAC rule 3745-17-08(B) is also considered a violation of ORC 3704.05(A).

Failure to obtain an appropriate PTI prior to installation of a new source constitutes a violation of OAC rule 3745-31-02(A). Violation of OAC rule 3745-31-02(A) is also considered a violation of ORC 3704.05(A).

**Requested Action:**

Ohio EPA requests that CSC install and operate equipment sufficient to comply with the requirements of OAC rule 3745-17-08 on this emissions unit. This equipment should be installed and begin operating within 90 days of receipt of this letter. A

notification that this installation has been performed and a description of the activities undertaken to comply with OAC rule 3745-17-08 should be submitted to Ohio EPA within 30 days of completion of installation and operation. If necessary, these activities should also be performed for the smaller shell sand core operation noted in the finding above.

Ohio EPA requests that CSC submit a PTI application and appropriate EAC form for the new emissions unit or justification for why the operation does not need a permit. In addition, please submit any and all assumptions, calculations, citations and guidance utilized when completing any of the above forms and information. This permit application should be submitted within 30 days of receipt of this letter.

**Summary of Requested Actions**

The "Actions" specified below are from each respective "Finding" throughout this letter. Please refer to previous sections of this letter for detailed descriptions of the "Findings" and "Violations" that prompted these requested "Actions".

**Ohio EPA requests that CSC immediately:**

- Re-examine the existing control equipment for P046, as currently configured, along with the equipment referenced in the applicable PTI, Title V, and Air Services. If necessary, please submit an application to modify the applicable PTI and ensure the correct baghouse is referenced in the current Air Services Facility Profile.

- Initiate and complete repair and maintenance of baghouse B-3657 in order to ensure that the pressure drop is maintained within the permitted range and maintain a record of this repair and maintenance on-site for review by Ohio EPA personnel.

- Initiate and complete repair of the Dakota wet acid scrubber in order to ensure that the pressure drop is maintained within the permitted range and maintain a record of this repair on-site for review by Ohio EPA personnel.

- Prior to start-up of the 3F mill and subsequent addition of material, operate baghouse B-3820 for a sufficient length of time to control visible particulate emissions from the mill enclosure.

**Within 30 days of receipt of this letter, please submit:**

- Submit an explanation of how daily VE data during furnace operations are collected, as indicated by daily records kept by CSC, when operations only occur at night.

- For emissions units P901 and P902, a plan and schedule that explains how the facility will demonstrate compliance with the requirements of OAC rule 3745-17-07(A).

- Perform repairs and maintenance on the following emissions units sufficient to comply with the effective Title V permit-to-operate and state and federal regulations: P012, P033, P906, and P908. A record of these repairs should be maintained on-site for review by Ohio EPA personnel.

- Perform repairs and maintenance on baghouses B-3552 and B-3306 sufficient to comply with the pressure drop requirements in the effective Title V permit-to-operate and state and federal regulations. A record of the repairs should be maintained on-site for review by Ohio EPA personnel.

- Submit a PTI application and appropriate EAC form for the new emissions unit located near P041 or modify the existing PTI, for P041 to include this new operation.

- For emissions unit Z033, submit a PTI application and appropriate EAC form for the new emissions unit or justification for why the operation does not need a permit.

- A compliance plan and schedule to perform the following emissions testing:

  a) VOC emissions and control efficiency testing on emissions units P053, P056 and P057 while using DMIPA as a catalyst. This plan should include specific dates and milestones necessary to complete emissions testing in a manner acceptable to Ohio EPA, and should specify that the emissions testing will be completed no later than 90 days from receipt of this letter.

  b) Emissions testing for emissions unit P012, P033, P905, P906, and P908 as required by the effective Title V permit. This plan should include specific dates and milestones necessary to complete emissions testing in a manner acceptable to Ohio EPA, and should specify that the emissions testing will be completed no later than 90 days from receipt of this letter.

c) Conduct emissions testing to determine appropriate NOx and CO emissions factors, in terms of lbs pollutant/MMBTU, for the annealing furnaces. Testing should conform to U.S. EPA methods 7E and 10. Please submit appropriate ITT forms within 30 days of receipt of this letter and test within 60 days of initial ITT submittal. If emissions testing indicates that Major NSR was triggered, then Ohio EPA requests appropriate permit applications be submitted within 120 days of receipt of this letter or 60 days following completion of testing, whichever is more stringent.

**Within 90 days of receipt of this letter, please:**

- Install and operate equipment sufficient to comply with the requirements of OAC rule 3745-17-08 on the cup machine (Z013).

**Within 120 days of receipt of this letter, please submit the following for uncontrolled breakout areas:**

- Complete PTI applications and appropriate EAC forms for each emissions unit and physical operation associated with the manipulator breakout area, the 3F Mill breakout area, and the East Pit breakout area. A compliance plan specifying how CSC will achieve and maintain the compliance with OAC rule 3745-17-08 and any other applicable rules, along with an updated Preventive Maintenance and Malfunction Abatement Plan.

**Conclusion:**

Please recognize that the above Findings and Violations were discovered as part of Columbus Steel Castings' Title V full compliance evaluation. This evaluation consists, of an evaluation of emissions units listed in the applicable Title V permit and was based upon observations made during referenced site visits. As the full compliance evaluation continues, additional site visits and records may be necessary to further assess the compliance status of Columbus Steel Castings.

Also, please note that Ohio Environmental Protection Agency has the authority to seek civil penalties as provided in section 3704.06 of the Ohio Revised Code (ORC). This letter or information submitted pursuant to this letter does not constitute a waiver of Ohio EPA's authority to seek civil penalties as provided in the ORC. The decision on whether or not to seek such penalties will be made by Ohio Environmental Protection Agency at a later date.

David Chamberlain
Columbus Steel Castings
March 30, 2010

If you have any questions, please contact Bryon Marusek at (614) 728-3803 or John McGreevy of my staff at (614) 728-3818.

Sincerely,

Adam Ward
Air Unit Manager
Division of Air Pollution Control
Central District Office

c: Adam Ward, DAPC/CDO
ec: Bryon Marusek, DAPC/CDO
John McGreevy, DAPC/CDO
Kelly Toth, DAPC/CDO
Isaac A. Robinson, III, Chief, CDO, w/attachments
Eric Yates, DAPC/CO, w/attachments
John Paulian, DAPC/CO, w/attachments
Jim Orlemann, DAPC/CO, w/attachments
Gary Pasheilich, AGO/EED, w/attachments
Gregg Bachmann, AGO/EED, w/attachments

Attachments: Ohio Engineering Guide #46

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