



Healthy People. Healthy Communities

August 6, 2018

Mr. Kelly Roberts  
 Johnson Controls Battery Group, Inc.  
 1800 Paper Mill Road  
 Florence, SC 29501

**RE: CX Scrubber, CX FEU Vent, Melter, Furnaces, Foundry Ventilation, Refining, & Slag Warehouse Emissions Testing – Conducted November 27 - December 13, 2017 - REDACTED Summary**

Dear Mr. Roberts:

The Department has reviewed the referenced tests and the results are summarized below:

<b>CX Scrubber Average Emissions Summary</b>			
<b>Pollutant</b>	<b>Emission Rate (lb/hr)</b>	<b>Emission Concentration</b>	<b>Emission Limits</b>
PM	6.44E-02	1.13 mg/dscm 4.94E-04 gr/dscf	8.49lb/hr <sup>1</sup>
Lead	6.29E-04	1.11E-02 mg/dscm 4.85E-06 gr/dscf	2.0 mg/dscm 8.70E-05 gr/dscf
Sulfuric Acid	9.96E-02	4.13E-01 ppm	-----

<sup>1</sup>Based on S.C. Regulation 61-62.5, Standard 4.

<b>CX Plant FEU Vent Average Emissions Summary*</b>			
<b>Pollutant</b>	<b>Emission Concentration</b>	<b>Emission Rate</b>	<b>Modeled Emission Rates</b>
PM	7.19E-05 gr/dscf	2.50E-02 lb/hr	6.74E-03 lb/hr
Lead	3.28E-06 gr/dscf	1.15E-03 lb/hr	6.70E-04 lb/hr
Sulfuric Acid	6.56E-02 ppm	4.36E-02 lb/hr	6.06E-03 lb/hr

\*One FEU Vent was tested. These emission rates may be used as emission factors for all CX FEU Vents.

The PM, lead, and sulfuric acid emission rates are greater than the Modeled Emissions Rates in the Attachment of Permit #1040-0129-CC. Please notify the Department (attention Derek Williams) by **September 3, 2018**, of your plans to resolve this issue. Some options are to retest the source or re-model the source to demonstrate compliance at the tested emission rates. Although retesting would probably still show an exceedance of the current modeled emissions, it may demonstrate lower PM, lead, and sulfuric acid emissions, which could be used for re-modeling.

If you decide to retest, the tests will be subject to SC Regulation 61-62.1 Section IV which includes test plan submittal and notification requirements. If you decide to re-model, please contact the Department's Engineering Services Division and submit a permit application requesting an increase in emissions that includes modeling to demonstrate compliance. Your Permit Engineer, Breanna Lindler, can be reached via e-mail at lindlebl@dhec.sc.gov or by phone at 803-898-0457.

<b>Melter and Charge Prep Average Emissions Summary</b>			
<b>Pollutant</b>	<b>Emission Rate (lb/hr)</b>	<b>Emission Concentration</b>	<b>Emission Limit</b>
Lead	4.09E-03	9.71E-03 mg/dscm 4.24E-06 gr/dscf	2.00E-01mg/dscm 8.70E-05 gr/dscf

<b>Furnace No. 1 Average Emissions</b>			
<b>Pollutant</b>	<b>Emission Concentration</b>	<b>Emission Rate</b>	<b>Emission Limit</b>
Lead	1.81E-06 gr/dscf 4.14E-03 mg/dscm	6.01E-04 lb/hr	8.70E-05 gr/dscf 0.2 mg/dscm
Sulfur Dioxide	<0.66 ppm	<0.24 lb/hr	<100 tpy <sup>1</sup>

<sup>1</sup>Facility-wide emission limit.

<b>Furnace No. 2 (ID 08) Average Emissions</b>			
<b>Pollutant</b>	<b>Emission Concentration</b>	<b>Emission Rate (lb/hr)</b>	<b>Emission Limit</b>
Lead	2.07E-06 gr/dscf 4.74E-03 mg/dscm	7.13E-04	8.70E-05 gr/dscf 0.2 mg/dscm
Sulfur Dioxide	5.86 ppm	2.32	<100 tpy <sup>1</sup>
Acetaldehyde	<2.61 ppm	<0.701	----
Vinyl Chloride	<0.509 ppm	<0.201	----
Acrolein	<0.666 ppm	<0.236	----
1,3-Butadiene	<0.104 ppm	<3.55E-02	----
Chloroform	<5.25E-03ppm	<3.99E-03	----
Benzene	<8.54E-03 ppm	<4.25E-03	----
Toluene	<5.95E-03 ppm	<3.49E-03	----

<sup>1</sup>Facility-wide emission limit.

<b>Furnace No. 2 (ID 08) Average Emissions</b>			
Ethylbenzene	<6.44E-03 ppm	<4.35E-03	----
p-Xylene	<1.27E-02 ppm	<8.58E-03	----
m-Xylene	<1.27E-02 ppm	<8.58E-03	----
o-Xylene	<6.59E-03 ppm	<4.45E-03	----
Styrene	<9.01E-03 ppm	<5.97E-03	----
Formaldehyde	0.274 ppm	5.34E-02	----
Propionaldehyde	3.02E-02 ppm	1.12E-02	----

<b>Furnace No. 3 (ID 09) Average Emissions</b>			
<b>Pollutant</b>	<b>Emission Concentration</b>	<b>Emission Rate</b>	<b>Emission Limit</b>
Lead	1.63E-06 gr/dscf 3.73E-03 mg/dscm	7.86E-04 lb/hr	8.70E-05 gr/dscf 0.2 mg/dscm
Sulfur Dioxide	<0.390 ppm	<0.184 lb/hr	<100 tpy <sup>1</sup>

<sup>1</sup>Facility-wide emission limit.

<b>Refining Kettles and Casting (ID 11) - Process Stack Average Emissions Summary</b>			
<b>Pollutant</b>	<b>Emission Concentration</b>	<b>Emission Rate</b>	<b>Emission Limit</b>
Lead	9.79E-07 gr/dscf 2.24E-03 mg/dscm	7.86E-04 lb/hr	8.70E-05 gr/dscf 0.2 mg/dscm
Carbon Monoxide	5.35 ppm	2.18 lb/hr	----
Sulfur Dioxide	<13.0 ppm	<12.4 lb/hr	<100 tpy <sup>1</sup>

<sup>1</sup>Facility-wide emission limit.

<b>Refining Kettles and Casting - Combustion Stack (ID 11) Average Emissions Summary</b>			
<b>Pollutant</b>	<b>Emission Concentration</b>	<b>Emission Rate</b>	<b>Emission Limit</b>
Carbon Monoxide	12.0 ppm	0.762 lb/hr	<100 tpy <sup>1</sup>
Sulfur Dioxide	<0.1 ppm	<1.47E-02 lb/hr	<100 tpy <sup>1</sup>

<sup>1</sup>Facility-wide emission limit.

<b>Refining Ventilation (ID 12) Average Emissions Summary*</b>			
<b>Pollutant</b>	<b>Emission Rate</b>	<b>Emission Concentration</b>	<b>Emission Limit</b>
Lead	4.25E-03 lb/hr	3.34E-05 gr/dscf 7.64E-02 mg/dscm	4.3E-04 gr/dscf 1.0 mg/dscm

\*One vent was sampled. Results may be used for calculating emissions from all refining vents.

<b>Foundry Ventilation (ID10) Average Emissions Summary</b>			
<b>Pollutant</b>	<b>Emission Rate</b>	<b>Emission Concentration</b>	<b>Emission Limit</b>
Lead	5.52E-04 lb/hr	7.71E-07 gr/dscf 1.76E-03 mg/dscm	4.3E-04 gr/dscf 1.0 mg/dscm

<b>Slag Warehouse (ID14) Average Emissions</b>			
<b>Pollutant</b>	<b>Emission Concentration</b>	<b>Emission Rate</b>	<b>Emission Limit</b>
PM	4.05E-04 gr/dscf 0.927 mg/dscm	0.109 lb/hr	5.66 lb/hr <sup>1</sup>
Lead	1.16E-06 gr/dscf 2.67E-03 mg/dscm	3.03E-04 lb/hr	8.70E-05 gr/dscf 4.3E-04 mg/dscm

<sup>1</sup>Based on SC Regulation 61-62.5, Standard No. 4.

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Compliance Status:  
(Permit No. 1040-0129-CA).....**Compliance**  
(40 CFR 63, Subpart X).....**Compliance**

If I can be of further assistance, please do not hesitate to call me at (803) 898-0834 or e-mail me at williad@dhc.sc.gov.

Sincerely,



Derek T. Williams  
Environmental Health Manager  
Source Evaluation Section  
SC DHEC Bureau of Air Quality

Cc: Compliance file 1040-0129

Ec: Michael Shroup, BAQ                      Dawn Jordan, BAQ                      Laura Fredrickson, BAQ  
Brittany Staples, BAQ                      Connie Turner, BAQ  
Breanna Lindler, BAQ                      Bryan Baxley, Pee Dee Region - Florence BEHS

