



Louisville Metro Air Pollution Control District
850 Barret Avenue
Louisville, Kentucky 40204-1745



Permit No.: C-1216-1000-15-V

Plant ID 1216

Effective Date: [Click here to enter a date.](#)

Expiration Date: [Click here to enter a date.](#)

BAE Systems
163 Rochester Drive
Louisville, KY 40214

is authorized to construct the described control equipment by the Louisville Metro Air Pollution Control District. Authorization is based on information provided with the application submitted by the company and in accordance with applicable regulations and the conditions specified herein.

Process equipment description:

One (1) 1,417 lb/hr Blast-It-All model 122010 blast booth (U17, E12) with glass bead blasting media, coal slag blasting media, or aluminum oxide blasting media for surface preparation of miscellaneous metal parts controlled by a baghouse (C12).

One (1) 1,097 lb/hr Hoffman blast booth (U17, E45) that can use either glass bead blasting media, coal slag blasting media, or aluminum oxide blasting media for surface preparation of miscellaneous metal parts and controlled by a Donaldson Torit baghouse model HDFT2-12 (C45).

One (1) 1,850 lb/hr JBI model BE-25-WSB-S blasting booth (U17, E42) controlled with a JBI model 60-10-3 baghouse (C42) and one (1) 100 lb/hr Cycloblast Dry Honer model 4836-F blasting cabinet (U12, E43) with controlling filters.

Applicable Regulation(s): 2.03, 2.16, 5.00, 5.01, 5.14, 5.20, 5.21, 5.23, and 7.08

Application No.: See table.

Application Received: 8/24/2010
(See table)

Permit Writer: Emily Tyler / Nantaporn Noosai

Public Comment Date: 2/16/2011; 10/24/2015

{manager1}
Air Pollution Control Officer
{date1}

Applications

Application Number	Application Received	Type
72287	6/26/2015	STAR Environmental Acceptability Demonstration Revision
62500	2/14/2014	Application for Blast-It-All blast booth (permit number 29845-10-C)
17194	12/17/2010	Application for Hoffman blast booth (permit number 31207-11-C)
17180	2/4/2010	Application for JBI blast booth (permit number 28-10-C).

Construction Permit Revisions

Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
29845-10-C	01/06/2011	12/04/2010	Initial	Entire Permit	Initial Permit Issuance for One (1) 1,417 lb/hr Blast-It-All model 122010 blast booth (U17, E12) with glass bead blasting media for surface preparation of miscellaneous metal parts controlled by a baghouse (C12).
29845-10-C(R1)	01/06/2011	12/04/2010	Revision	Cover Page	Add aluminum oxide as acceptable blasting media.
29845-10-C(R2)	04/02/2014	03/01/2014	Revision	Entire Permit	Re-construction of blast booth.
28-10-C	07/31/2010	06/25/2010	Initial	Entire Permit	Initial Permit Issuance for one (1) 1,850 lb/hr JBI BE-25-WSB-S blasting booth (U17, E42) and one (1) 100 lb/hr Cycloblast Dry Honer model 4836-F blasting cabinet (U12, E43) with controlling filters.
28-10-C (R1)	01/06/2011	N/A	Revision	Cover Page	Update description.
31207-11-C	03/21/2011	02/16/2011	Initial	Entire Permit	Initial Permit Issuance for One (1) 1,097 lb/hr Hoffman blast booth (U17, E45) that can use either glass bead blasting medium or aluminum oxide blasting medium for surface preparation of miscellaneous metal parts and controlled by a Donaldson Torit baghouse model DFR2-212 (C45).
C-1216-1000-15-V	X/X/2015	10/24/2015	Revision	Entire Permit	Incorporation of Construction permits 29845-10-C(R2), 28-10-C(R1) and 31207-11-C. Updated Chromium VI limits to reflect modeling submitted on 6/26/2015 by the source.

This permit covers only the provisions of Kentucky Revised Statutes Chapter 77 Air Pollution Control, the regulations of the Louisville Metro Air Pollution Control District (District) and, where appropriate, certain federal regulations. The issuance of this permit does not exempt any owner or operator to whom it has been issued from prosecution on account of the emission or issuance of any air contaminant caused or permitted by such owner or operator in violation of any of the provisions of KRS 77 or District regulations. Any permit shall be considered invalid if timely payment of applicable fees is not made after receipt of the statement of fees (SOF). The permit contains general permit conditions and specific permit conditions. General conditions are applicable unless a more stringent requirement is specified elsewhere in the permit.

General Conditions

- G1. The owner or operator of the affected facility covered by this permit shall notify the District of any process change, equipment change, material change, or change in method or hours of operation. This requirement is applicable to those changes (except equipment changes) that may have the potential for increasing the emission of air contaminants to a level in excess of the applicable limits or standards specified in this permit or District regulations.
- G2. The owner or operator shall obtain new or revised permits from the District when:
(See District Regulation 2.16 for Title V sources. See District Regulation 2.17 for FEDOOP sources. See District Regulation 2.03 for other sources.)
- a. The company relocates to a different physical address.
 - b. The ownership of the company is changed.
 - c. The name of the company as shown on the permit is changed.
 - d. Permits are nearing expiration or have expired.
- G3. The owner or operator shall submit a timely application for changes according to G2. For minor sources only, the District does not require application for permit renewal. The District automatically commences the process of permit renewal for minor sources upon expiration. Timely renewal is not always achievable; therefore, the company is hereby authorized to continue operation in compliance with the latest District permit(s) until the District issues the renewed permit(s).
- G4. The owner or operator shall not be authorized to transfer ownership or responsibility of the permit. The District may transfer permits after appropriate notification (Form AP-100A) has been received and review has been made.
- G5. The owner or operator shall pay the required permit fees within 45 days after issuance of the SOF by the District, unless other arrangements have been proposed and accepted by the District.

- G6. This permit allows operation 8,760 hours per year unless specifically limited elsewhere in this permit.
- G7. The owner or operator shall submit emission inventory reports as required by Regulation 1.06.
- G8. The owner or operator shall timely report abnormal conditions or operational changes, which may cause excess emissions as required by Regulation 1.07.
- G9. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month.
- G10. If a change in the Responsible Official (RO) occurs during the term of this permit, the owner or operator shall provide written notification (Form AP-100A) to the District within 30 calendar days of the date the RO change occurs.

Specific Conditions

S1. Standards (Regulation 2.03, section 6.1)

a. PM/PM₁₀

- i. The owner or operator shall not allow PM emissions to exceed 2.47 lb/hr for the Hoffman blast booth (U17, E45). (Regulation 7.08, section 3.1.2)
- ii. The owner or operator shall not allow PM emissions to exceed 3.41 lb/hr for the JBI blast booth (U17, E42) (Regulation 7.08, section 3.1.2)
- iii. The owner or operator shall not allow PM emissions to exceed 2.34 lb/hr for the Cycloblast Dry Honer blasting cabinet (U12, E43). (Regulation 7.08, section 3.1.2)
- iv. The owner or operator shall not allow PM emissions to exceed 2.90 lb/hr for the Blast-It-All blast booth (U17, E12). (Regulation 7.08, section 3.1.2)
- v. The owner or operator shall not allow PM/PM₁₀ emissions to exceed 100 tons per 12 consecutive months, plantwide. (Regulation 2.05)(See [Comment 1](#))
- vi. The owner or operator shall use filters certified to meet the manufacturer's original specifications in the control device. (Regulation 2.03, section 6.1)
- vii. The owner or operator shall utilize the baghouse at all times the blast booth is in operation and shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. (Regulation 2.03, section 6.1) (See Comment 2)

b. Opacity

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

c. TAC

- i. The owner or operator shall not allow emissions of Chromium VI to exceed *de minimis* levels for the Hoffman blast booth (U17, E45), and the JBI blast booth (U17, E42). (Regulation 5.21, section 3.1.1) (See [Comments 3 and 4](#))
- ii. The owner or operator shall not allow Chromium VI emissions to exceed 0.0359 lb per 12 consecutive month period for the Blast-It-All blast booth

(U17, E12) (Regulation 5.21, section 3.1.1) (See [Comment Error! Reference source not found.](#))

- iii. The owner or operator shall not exceed 2,305 hours of operation per 12 consecutive months for the Blast-It-All blast booth (U17, E12). (See [Comment 3](#))
- iv. See [Specific Conditions S1.a.vii.](#)
- v. The owner or operator shall not allow emissions of any TAC to exceed environmentally acceptable (EA) levels, whether specifically established by modeling or determined by the District to be *de minimis*. (Regulation 5.00 and 5.21)

S2. **Monitoring and Record Keeping (Regulation 2.03, section 6.1)**

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM/PM₁₀**

- i. The owner or operator shall monthly calculate and record PM/PM₁₀ emissions plantwide monthly and for the past 12-consecutive months.
- ii. The owner or operator shall maintain daily records that identify all periods of bypassing the control device while the blast booth is in operation or a declaration entered into the records that the baghouse operated at all times the blast booth was in operation for a given day. The record shall include the following:
 - 1) The date, duration (including start and stop time) of each bypass event;
 - 2) Identification of the control device and process equipment in operation;
 - 3) The total lb/hr of PM emissions;
 - 4) Summary information of the cause or reason for each control device bypass event;
 - 5) Corrective action taken to minimize the extent and duration of each bypass event; and
 - 6) Measures implemented to prevent reoccurrence of the situation that resulted in bypassing the control device.
- iii. The owner or operator shall, monthly, perform and keep records of a visual inspection of the structural and mechanical integrity of the dust collector for signs of damage, air leakage, corrosion, etc. and repair as needed.

- iv. The owner or operator shall, daily, monitor and record the pressure drop across the baghouse while the blast booth and baghouse are in operation. The owner or operator shall take corrective action if the pressure drop across the baghouse is out of the normal pressure drop range. (See Comments 5, 6 and 7)
- v. The owner or operator shall maintain records of the certification for the filters in the control device.

b. Opacity

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

c. TAC

- i. The owner or operator shall maintain records sufficient to demonstrate environmental acceptability, including, but not limited to, MSDS, analysis of emissions, and/or modeling results.
- ii. The owner or operator shall re-evaluate the environmental acceptability and document the environmentally acceptable emissions if a new TAC is introduced or the content of a TAC in a raw material increases above *de minimis* at the time of the change.
- iii. The owner or operator shall daily monitor and record the hours of operation of the Blast-It-All model 122010 blast booth.
- iv. The owner or operator shall maintain 12-month rolling totals of the hours of operation of the Blast-It-All model 122010 blast booth.

- v. The owner or operator shall monthly calculate and record the monthly and 12-consecutive month Chromium VI emissions for Blast-It-All model 122010 blast booth.
- vi. The owner or operator shall maintain daily records that identify all periods of bypassing the control device while the blast booth is in operation or a declaration entered into the records that the control device operated at all times the blast booth was in operation for a given day. The record shall include the following:
 - 1) The date, duration (including start and stop time) of each bypass event;
 - 2) Identification of the control device and process equipment in operation;
 - 3) The total lb/12-consecutive month and lb/hr emissions of each TAC during each bypass event;
 - 4) Summary information on the cause or reason for each control device bypass event;
 - 5) Corrective action taken to minimize the extent and duration of each bypass event; and
 - 6) Measures implemented to prevent reoccurrence of the situation that resulted in bypassing the control device.

S3. Reporting (Regulation 2.03, section 6.1)

The owner or operator shall submit semi-annual compliance reports that include the information in this section. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall be postmarked within 60 days following the end of each reporting period. All compliance reports shall include the following certification statement per Regulation 2.16, section 3.5.11.

- “Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete.”
- Signature and title of the Responsible Official of the company.

The compliance reports are due on or before the following dates of each calendar year:

<u>Reporting Period</u>	<u>Report Date</u>
January 1 st through June 30 th	August 29 th
July 1 st through December 31 st	March 1 st

a. PM/PM₁₀

- i. The owner or operator shall identify all periods of exceeding PM lb/hr emission standards during a reporting period. The report shall include the following:

- 1) Emission point ID number;
 - 2) The date and duration (including start and stop time) during which a deviation occurred;
 - 3) The quantity of excess emissions;
 - 4) Summary information on the cause or reason for excess emissions;
 - 5) Corrective action taken to minimize the extent and duration of each excess emissions event; and
 - 6) Measures implemented to prevent reoccurrence of the situation that resulted in excess PM emissions.
 - 7) If no deviations occur during a semi-annual reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall report any deviation from the requirement of performing a monthly visual inspection of the structural and mechanical integrity of the baghouse.
- iii. The owner or operator shall report any deviation that the pressure drop across the baghouse is out of normal range and the action taken to correct the deviation.
- iv. The owner or operator shall report any deviation from the requirement to utilize the baghouse at all times the blast booth is in operation, including the following:
- 1) Number of times the shot bypasses the baghouse and is vented to the atmosphere;
 - 2) The date, duration (including start and stop time) of each bypass to the atmosphere; and
 - 3) Calculated quantity of tons of PM emitted for each bypass.
 - 4) A negative declaration if no bypasses occurred.
- v. The owner or operator shall include, at a minimum, the following information in the semi-annual compliance monitoring reports for the 12-consecutive month emissions of PM/PM₁₀:
- 1) The monthly and 12-consecutive month PM/PM₁₀ emissions, plantwide, for each month in the reporting period;
 - 2) Identification of all periods of exceedances of the plantwide PM/PM₁₀ emission limit including the quantity of excess emissions;
 - 3) Reason for excess emission whether process upset, control device malfunction, other known causes, or unknown causes; and
 - 4) Description of any corrective action taken.
 - 5) A negative declaration if there were no excess emissions.

b. Opacity

- i. Any deviation from the requirement to perform monthly visible emission surveys or Method 9 tests;
- ii. Any deviation from the requirement to record the results of each visible emission survey and Method 9 test performed;
- iii. The number, date, and time of each visible emission survey where visible emissions were observed and the results of the Method 9 test performed;
- iv. Identification of all periods of exceeding an opacity standard; and
- v. Description of any corrective action taken for each exceedance of the opacity standard.

c. TAC

- i. The owner or operator shall report any conditions that were inconsistent with those conditions analyzed in the most recent Environmental Acceptability Demonstration or a negative declaration stating that operations were within the conditions analyzed. This includes, but is not limited to, control device upset conditions.
- ii. For any conditions outside the analysis, the owner or operator shall re-analyze to determine whether these conditions comply with the STAR program. Changes to the air dispersion modeling program or meteorological data used in the most recent Environmental Acceptability Demonstration do not trigger the requirement to re-analyze. (Regulation 5.21 sections 4.22 – 4.24)
- iii. The owner or operator shall submit the re-evaluated EA demonstration to the District within 6 months after a change of a raw material as described in S.2.c.ii.
- iv. Identification of all periods of bypassing the baghouse while the blast booth was in operation during a reporting period. The report shall include the following:
 - 1) The date, duration (including start and stop time) of each bypass event;
 - 2) The total lb/12-consecutive month and lb/hr of each TAC during each bypass event;
 - 3) Summary information on the cause or reason for each control device bypass event;
 - 4) Corrective action taken to minimize the extent and duration of each bypass event; and

- 5) Measures implemented to prevent reoccurrence of the situation that resulted in bypassing the baghouse.
- 6) If there are no periods of bypassing the baghouse during a reporting period, the owner or operator shall submit a negative declaration for the reporting period.

S4. Testing (Regulation 2.03, section 6.1)

The owner or operator shall construct all equipment in such a manner that the following testing requirements can be performed.

a. TAC

- i. The owner or operator shall, at least every 10 years based on the date of the previous stack test, perform a capture and control efficiency test using EPA guidelines to determine the baghouse efficiency.
- ii. The owner or operator shall submit a written compliance test plan that includes the EPA test methods that will be used for compliance testing, the process operating parameters that will be monitored during the compliance test, and the control device performance indicators (e.g. pressure drop) that will be monitored during the compliance test. The compliance test plan shall be furnished to the District at least 30 days prior to the actual date of the compliance test. Attached to the permit is a Protocol Checklist for Performance Test for the information to be submitted in the protocol.
- iii. The owner or operator shall provide the District at least 10 days' notice of any compliance test to afford the District the opportunity to have an observer present.
- iv. The owner or operator shall furnish the District with a written report of the results of the compliance test within 60 days following the actual date of the compliance test.

Comments

1. The PM/PM₁₀ limit of 100 tons per year, plantwide, is a PSD avoidance limit.
2. The District has determined that the uncontrolled PM emissions from the Hoffman blast booth (U17, E45), JBI model BE-25-WSB-S blast booth (U17,E42), and Blast-It-All model 122010 blast booth (U17, E12) exceed their lb/hr PM emission limits. Therefore, the owner or operator is required to operate the control devices in these blast booths as all times that the units are in operation.
3. This construction permit revision is to incorporate the source submitted updated STAR Environmental Acceptability Demonstration (EA Demo) for the Hoffman blast booth (U17, E45), JBI blast booth, and Blast-It-All blast booth (U17, E12) received on June 26, 2015. The EA Demo used AERMOD air dispersion modeling for Category 1 TAC

Chromium VI. The following table shows the EA Demo results for the Hoffman blast booth (U17, E45) and JBI blast booth (U17, E42). The environmental acceptability for this process has been demonstrated. Since the source modeled at less than de minimis, they will be given de minimis as a limit.

Equipment	Single process Industrial property R_C	Single process Industrial property EAGC	Single process Non-adjusted R_C	Single process Non-adjusted EAGC
Hoffman blast booth (U17, E45)	1.359	10.0	0.588	1.0
JBI blast booth (U17, E42)	0.0142	10.0	0.0103	1.0

For the Blast-It-All blast booth (U17, E12), the EA Demo showed a single process industrial property R_C of 11.31 (max EAGC, 10.0) and a single process non-adjusted R_C of 3.79 (max EAGC, 1.0). To achieve an R_C within the limits of the max EAGC, the hours of operation of the blast booth are limited to 2,305 hours per 12 consecutive month period, the baghouse control is required, and Chromium VI emissions are limited to 0.0359 lb per 12 consecutive month period. With this limit, the single process industrial property R_C is 2.98 (max EAGC, 10.0) and the single process non-adjusted R_C is 0.997 (max EAGC, 1.0). The environmental acceptability for this process has been demonstrated.

4. As of the effective date of this permit, the *de minimis* levels of Chromium VI are:

TAC	CAS #	TAC Limits Determination		
		(lbs/hr)	(lbs/yr)	Averaging Period
Chromium VI	7440-47-3	0.000045	0.040	Annual

5. BAE Systems conducted a performance test for the Hoffman blast booth (U17, E45) required by Construction Permit 31207-11-C on May 8, 2013. According to the test report received June 10, 2013, the uncontrolled and controlled PM emission rates are 78.164 lb/hr and 0.122 lb/hr; the uncontrolled and controlled Chromium VI emission rates are 0.0011 lb/hr and $1.90e^{-6}$ lb/hr. The normal pressure drop range is 1.0" - 6.0" water column.
6. BAE Systems conducted a performance test for the JBI model BE-25-WSB-S blast booth (U17, E42) required by Construction Permit 28-10-C on April 5, 2011 and June 14, 2011. According to the test report received September 13, 2011, the uncontrolled and controlled PM emission rates are 68.4 lb/hr and 0.17 lb/hr; the uncontrolled and controlled Chromium VI emission rates are $2.42e^{-4}$ lb/hr and $6.99e^{-7}$ lb/hr. The normal pressure drop range is $3.5'' \pm 2.0''$ water column.
7. BAE Systems conducted the performance test for the Blast-It-All blast booth (U17, E12) required by Construction Permit 29845-10-C(R1) on April 5, 2011. According to the test report received June 3, 2011, the uncontrolled and controlled PM emission rates are 118

lb/hr and 0.476 lb/hr; the uncontrolled and controlled Chromium VI emission rates are $3.04e^{-3}$ lb/hr and $1.56e^{-5}$ lb/hr. The normal pressure drop range is 2"-8.3" water column.

8. The construction permit fee of \$4,132.13 is based on the Schedule of Fees table in Regulation 2.08, section 12. The following table is a breakdown of the applicable fees.

Fee Type	Amount
Permit Actions: Significant Permit Revision	\$2,582.58
STAR Program: EA Demo with Tier 3 or 4 Modeling	\$1,549.55

Protocol Checklist for a Performance Test

A completed protocol should include the following information:

- 1. Facility name, location, and ID #;
- 2. Responsible Official and environmental contact names;
- 3. Permit numbers that are requiring the test to be conducted;
- 4. Test methods to be used (i.e. EPA Method 1, 2, 3, 4, and 5);
- 5. Alternative test methods or description of modifications to the test methods to be used;
- 6. Purpose of the test including equipment and pollutant to be tested; the purpose may be described in the permit that requires the test to be conducted or may be to show compliance with a federal regulation or emission standard;
- 7. Tentative test dates (These may change but the District will need final notice at least 10 days in advance of the actual test dates in order to arrange for observation.);
- 8. Maximum rated production capacity of the system;
- 9. Production-rate goal planned during the performance test for demonstration of compliance (if appropriate, based on limits);
- 10. Method to be used for determining rate of production during the performance test;
- 11. Method to be used for determining rate of production during subsequent operations of the process equipment to demonstrate compliance;
- 12. Description of normal operation cycles;
- 13. Discussion of operating conditions that tend to cause worse case emissions; it is especially important to clarify this if worst case emissions do not come from the maximum production rate;
- 14. Process flow diagram;
- 15. The type and manufacturer of the control equipment, if any;
- 16. The control equipment (baghouse, scrubber, condenser, etc.) parameter to be monitored and recorded during the performance test. Note that this data will be used to ensure representative operation during subsequent operations. These parameters can include pressure drops, flow rates, pH, and temperature. The values achieved during the test may be required during subsequent operations to describe what pressure drops, etcetera, are indicative of good operating performance; and
- 17. How quality assurance and accuracy of the data will be maintained, including:
 - Sample identification and chain-of-custody procedures
 - If audit samples are required for this test method, audit sample provider and number of audit samples to be used
- 18. Pipe, duct, stack, or flue diameter to be tested;
- 19. Distances from the testing sample ports to the nearest upstream and downstream flow disturbances such as bends, valves, constrictions, expansions, and exit points for outlet and additionally for inlet;
- 20. Determine number of traverse points to be tested for outlet and additionally for inlet if required using Appendix A-1 to 40 CFR Part 60;
 - Method 1 if stack diameter is >12"
 - Method 1a if stack diameter is greater than or equal to 4" and less than 12"
 - Alternate method of determination for <4"
 - If a sample location at least two stack or duct diameters downstream and half a diameter upstream from any flow disturbance is not available then an alternative procedure is available for determining the acceptability of a measurement location. This procedure described in Method 1, Section 11.5 allows for the determination of gas flow angles at the sampling points and comparison of the measured results with acceptability criteria.
- 21. The Stack Test Review fee shall be submitted with each stack test protocol.