

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

B874725362

FACILITY: JOHNSON MATTHEY VEHICLE TESTING & Development, LLC		SRN / ID: B8747
LOCATION: 12600 UNIVERSAL DR, TAYLOR		DISTRICT: Detroit
CITY: TAYLOR		COUNTY: WAYNE
CONTACT: Mark Tomczyk , Manager		ACTIVITY DATE: 05/30/2014
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM 208A
SUBJECT: Engine Testcells		
RESOLVED COMPLAINTS:		

INSPECTED BY : Terseer Hemben, MDEQ  
 PERSONNEL PRESENT : Mark Tomczyk, EHS/Coordinator  
 CONTACT PHONE NUMBER : (734)-946-9856  
 FACILITY FAX : (734) 946-8312  
 DATES OF INSPECTION : 5/30/2014  
 SRN: B8747

**FACILITY BACKGROUND: JOHNSON-MATTHEY VEHICLE TESTING & DEVELOPMENT**

I arrived at the facility at 1120 hours. The purpose of the visit was to conduct an annual inspection for compliance per permit conditions requirement. Temperature at the hour was 68 F with the wind speed averaging 5 mph coming from Variable directions. Johnson-Matthey is located at 12600 Universal Drive in Taylor. Johnson-Matthey operates internal combustion engines in test cells in association with dynamometer testing. The testing process emits criteria pollutants. This company is subject to permitting exemptions on certain equipment and operates as a 208a source. The Company upgraded all the TestCells to operating with catalytic converter system as control device. The facility also installed and uses dilution technology for more environmentally friendly discharge of pollutants to the ambient air. The permits reflect the changes made. Mr. Tomczyk excused himself from a meeting and joined me in the lobby. After the pre-inspection interview, we inspected the Testcells. I left the area at 1245 hours.

**COMPLAINT/COMPLIANCE HISTORY:**

Johnson-Matthey Vehicle Testing & Development has been a source of citizen air quality complaints, but no violation has been associated with their operational process.

**OUTSTANDING CONSENT ORDERS:**

None

**OUTSTANDING LOV'S:**

None

**OPERATING SCHEDULE/PRODUCTION RATE:**

The facility is capable of operating 24 hours per day, 365 days per year. However, currently, the facility is limited by its workload that has reduced greatly with the declining economy.

**PROCESS DESCRIPTION:**

Johnson-Matthey Vehicle Testing & Development tests a wide variety of internal combustion engines for use in many applications. In addition, the company tests the aging process of catalysts for Ford and GM customers. Catalyst testing takes the same methodology as the standard engine testing. The difference in the methodologies of internal combustion engine rating and the catalyst testing is the extended period of time for testing catalysts. Performance requires extra run-time on catalysts. All testing take place in dynamometer test cells. Each test cell contains a dynamometer which is an electrical device for measuring various mechanical performance characteristics of an engine. The

dynamometer itself does not have associated emissions. Emissions from the source are attributed to the engines. The emissions from each cell are exhausted through stacks.

The catalyst testing is monitored by emissions bench. A bench consists of an Analyzer, which provides emissions data every five hours. The Analyzer samples and provides the levels of C, CO, O<sub>2</sub>, hydrocarbons, and NO<sub>x</sub>. Oxygen levels, are, however, read every 6 seconds for the purpose of measuring air/fuel ratios.

The exhaust stacks are characterized by the following common features:

- An inside diameter of 12 inches
- A height above grade of 35 feet
- An average exhausts temperature of 800 deg. F.
- An average exhaust flow rate of 1600 acfm

Johnson -Matthey Vehicle Testing & Development (JMVT) added an exhaust gas dilution mechanism to its exhaust process. The dilution machine takes in fresh ambient air and mixes with exhaust gases from the TestCells before discharging to the ambient air through the stacks. The dilution technology facilitates dilution of pollutants before discharge, and subsequently improves dispersion of pollutants in low concentration into the ambient air.

#### EQUIPMENT AND PROCESS CONTROLS:

The JMVT approximates its fuel consumption to amount to 1, 250, 000 gallons or more, per year. This value poses as the worst case condition, when maximum use is made of 6.8 Liter V-10 Modular engines on continuous basis. Modular engines provide the greatest displacement among other Ford engines.

#### APPLICABLE RULES/PERMIT# 149-02I; 43-07; & 170-13 CONDITIONS:

Based on the Permit conditions, the inspection observed the operation was in:

1. In compliance – JMVT demonstrated there has not been any modification to any TESTCELLS system or process at the facility in the last 24 months. Mark stated there had been no modifications of equipment at the facility.
2. Not in compliance – JMVT did not demonstrate that the NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed the 35.9 tpy limit calculated on monthly and 12-month rolling time period as determined by the end of each calendar month. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
3. Not in compliance – JMVT did not demonstrate that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed the 0.35 lbs. gasoline per gallon limit without catalytic control determined based on protocol testing [SC 1.1b]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
4. Not in compliance – JMVT did not demonstrate that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed the 0.07 lbs. per gallon gasoline limit with catalytic control determined based on protocol testing [SC 1.1c]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
5. Not in compliance – JMVT did not demonstrate that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed the 0.0200 lbs. per gallon diesel limit with catalytic control determined based on protocol testing [SC 1.1d]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
6. Not in compliance – JMVT did not demonstrate that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed the 0.0667 lbs. per gallon diesel limit without catalytic control determined based on protocol testing [SC 1.1e]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
7. Not in compliance – JMVT did not demonstrate that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed the 681.6 lbs. per million cubic feet of natural gas limit with catalytic control determined based on protocol testing [SC 1.f]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.

8. Not in compliance- JMVT did not demonstrate that NOx emissions from the FGTESTCELLS did not exceed the 0.015 lbs. per gallon ethanol limit with catalytic control determined based on protocol testing [SC 1.1g]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
9. Not in compliance –JMVT did not demonstrate that NOx emissions from the FGTESTCELLS did not exceed the 2.8 lbs. per 1000 gallons propane limit with catalytic control determined based on protocol testing [SC 1.1h]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
10. Not in compliance – JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 20.5 lbs. per hour limit calculated on monthly determined by the end of each calendar month [SC 1.1i]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
11. Not in compliance – JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 0.1752 lbs. per gallon limit on gasoline, with catalytic controlled calculated based on protocol testing [SC 1.1j]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
12. Not in compliance – JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 1.752 lbs. per gallon limit on gasoline, without catalytic controlled calculated based on protocol testing [SC 1.1k]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
13. Not in compliance –JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 39.9 lbs. per Million cubic feet limit of natural gas with catalytic control determined based on protocol testing. [SC 1.1l]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
14. Not in compliance- JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 0.19 lbs. per 1000 gallons limit of propane, with catalytic controlled calculated based on protocol testing [SC 1.1m]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
15. Not in compliance – JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 0.23 lbs. per gallon limit of ethanol, with catalytic control calculated based on protocol testing [SC 1.1n]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
16. Not in compliance-JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 0.1434 lbs. per gallon limit of diesel, with catalytic control calculated based on protocol testing [SC 1.1o]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
17. Not in compliance- JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 1.434 lbs. per gallon limit of diesel, without catalytic controlled calculated based on protocol testing [SC 1.1p]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
18. Not in compliance – JMVT did not demonstrate that SO2 emissions from the FGTESTCELLS did not exceed the 6.81 lbs. per hour limit determined by the end of each calendar month [SC 1.1q]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
19. Not in compliance – JMVT did not demonstrate that Benzene emissions from the FGTESTCELLS did not exceed the 740.0 lbs. per year limit based on 12-month rolling time period as determined at the end of each calendar month [SC 1.1r]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
20. Not in compliance- JMVT did not demonstrate that Benzene emissions from

- the FGTESTCELLS did not exceed the 0.0047 lbs. per gallon gasoline limit with catalytic control determined based on protocol testing [SC 1.1s]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
21. Not in compliance – JMVT did not demonstrate that Benzene emissions from the FGTESTCELLS did not exceed the 0.0031 lbs. per gallon diesel limit without catalytic control determined based on protocol testing [SC 1.1t]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  22. Not in compliance – JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 0.0038 lbs. per gallon limit on diesel, with catalytic control calculated based on protocol testing [SC 1.1u]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  23. Not in compliance – JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 0.0253 lbs. per gallon limit of gasoline, without catalytic controlled calculated based on protocol testing [SC 1.1v]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  24. Not in compliance – JMVT did not demonstrate that CO emissions from the FGTESTCELLS did not exceed the 0.0047 lbs. per gallon limit of diesel, with catalytic control calculated based on protocol testing [SC 1.1w]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  25. Not in compliance- JMVT did not demonstrate the maximum amount of fuel usage for the FGTESTCELLS did not exceed 1,000 gallons per 12 month rolling time period in test cells which have no catalytic control as determined at the end of each calendar month [Condition 1.2]; and Permittee did not use more than 2000 gallons of diesel fuel per rolling 12-month time period in test cells that have no catalytic control. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  26. Not in compliance – JMVT did not demonstrate the sulfur content of all gasoline used in FGTESTCELLS did not exceed 0.085 percent by weight, and the sulfur content of all diesel used in FGTESTCELLS did not exceed 0.28 percent by weight [Condition 1.3]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  27. Not in compliance – JMVT did not demonstrate the permittee equipped and maintained each emission unit included in FGTESTCELLS with a catalytic converter, and is operated in a satisfactory manner with each catalytic converter operated at a minimum temperature of 600F based on an hourly average for diesel [SC 1.4]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  28. Not in compliance- JMVT did not demonstrate the permittee monitored either electronically, using a strip chart recorder or manual logging the exhaust gas temperature immediately before and after each catalytic bed, and temperature recordings were made at least once per every 15 min (4 per hour) [SC 1.5]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  29. Not in compliance- JMVT did not demonstrate the permittee kept in a satisfactory manner the following records for FG-TESTCELLS:
    - (a) The amount (in gallons) of diesel fuel used in FG-TESTCELLS without catalytic control and the average hour usage rate of diesel fuel without catalytic control on monthly basis.
    - (b) Total aggregated operating hours for all test cells, compiled on monthly basis.
    - (c) The amount (in gallons) of gasoline fuel used in FG-TESTING without catalytic control and the average hour usage of gasoline without catalytic control, compiled on monthly basis.
    - (d) The amount (in gallons) of ethanol used in FG-TESTCELLS and the average hourly usage rate of ethanol compiled on monthly basis.
    - (e) The amount (in cubic feet) of natural gas used in FG-TESTCELLS and the average hourly usage rate of natural gas compiled on monthly basis.

- (f) Total amount (in gallons) of propane fuel used in FG-TESTCELLS and the average hourly usage rate of propane fuel compiled on a monthly basis.
  - (g) Monthly NOx emission calculation records for FG-TESTCELLS.
  - (h) Monthly CO emission calculation records for FG-TESTCELLS.
  - (i) Monthly SO2 emission calculation records for FG-TESTCELLS.
  - (j) Monthly benzene emission calculation records for FG-TESTCELLS.
  - (k) Hourly records of the inlet and outlet temperatures in each catalytic converter.
  - (l) Records of the maximum sulfur content in the fuel for each delivery [SC. 1.6]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
30. In compliance – JMVT demonstrated the exhaust gases from stacks SV-TESTCELLS1-2 to SV-TESTCELLS 7-8 are discharged unobstructed vertically upwards to the ambient [Condition 1.13 (a-e)]. Visual inspection confirmed the proper discharge of gas to the ambient air.
31. Not in compliance- JMVT did not demonstrate within 90 days of startup of this permitted process, permittee verified NOx emission rates from EU-TESTCELLS8 by testing at owner's expense in accordance with the Department's requirements, and results for the said testing were communicated to the Department within 60 days after the test date [SC. 1.8] The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
- General Permit# 31-07B: FG-ENGINES
32. Not in compliance – JMVT did not demonstrate the maximum NOx emissions in FG-ENGINES were 515 lbs. per gallon based on Test method [SC. 1.1]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
33. Not in compliance- JMVT did not demonstrate permittee burned only diesel fuel in FG-ENGINES [SC. 1.2 The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
34. Not in compliance – JMVT did not demonstrate, if any electricity produced by FG-ENGINES was sold to a Utility Power distribution system; and the sulfur content of diesel fuel used did not exceed 0.05 percent by weight on an annual average, and annual average was calculated as specified in 40 CFR 72.7(d)(3) [SC. 1.3]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
35. Not in compliance – JMVT did not demonstrate the combined diesel fuel use for all units included in FG-ENGINES did not exceed 136,000 gallons per 12-months rolling time period [SC. 1.4]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
36. Not in compliance – JMVT did not demonstrate permittee operated FG-ENGINES in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions during periods of startup, shutdown and malfunction [SC.1.5]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
37. Not in compliance- JMVT did not demonstrate the total capacity from each unit included in FG-ENGINES did not exceed 5 MW [SC. 1.6]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
38. Not in compliance – JMVT did not demonstrate verification of NOx emission limit (515 lbs. NOx per 1000 gallon) of fuel used from one or more representative units of FG-ENGINES at owner's expense was performed in accordance with Department requirements, and results from the testing were submitted to the Department within 60 days following the last date of the test [SC. 1.7]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
39. Not in compliance- JMVT did not demonstrate permittee calibrated maintained and operated in a satisfactory manner a device to monitor and record, the fuel use for FG-ENGINES on a monthly basis [SC. 1.8]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
40. Not in compliance- JMVT did not demonstrate permittee kept in a satisfactory manner, records of the date, duration, and description of any malfunction, any maintenance performed and any testing results for FG-ENGINES, and records were kept on file for 5 years and available for the Department upon request [SC. 1.9]. The Company was issued a violation

- notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
41. Not in compliance – JMVT did not demonstrate if any electricity produced by FG-ENGINES was sold to a utility power distribution to a utility power distribution system, the permittee kept records of the sulfur content calculated in percent by weight on an annual average as required by SC. 1.3, and records were kept on file for 5 years and made available to the Department upon request [SC. 1.10]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  42. Not in compliance – JMVT did not demonstrate the permittee kept, in a satisfactory manner, monthly and 12 month rolling time average fuel use records for FG-ENGINES; the records indicated the total amount of fuel used in FG-ENGINES, and records were kept on file for five years and available to the Department upon request [SC. 1.11]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
  43. In compliance – JMVT demonstrated the exhaust gases from FG-ENGINES were discharged unobstructed vertically upwards to the ambient air [SC. 1.12]. Visual inspection confirmed compliance.
  44. Not in compliance – JMVT did not demonstrate if permittee modified FG-ENGINES, and records pertaining to modifications were kept on file and made available to the Department upon request [SC. 1.13]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.

#### Permit To Install# 170-13 EU-BULBCRUSHER

45. Not in compliance – JMVT did not demonstrate permittee did not crush more than the equivalent of 150 eight-foot fluorescent light bulbs in EU-BULBCRUSHER per calendar day. [SC. II.1].
46. Not in compliance – JMVT did not demonstrate the permittee did not crush more than the equivalent of 3000 eight-foot fluorescent light bulbs in EU-BULBCRUSHER per 12-month rolling time period [SC. II.2]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
47. Not in compliance – JMVT did not demonstrate the EU-BULBCRUSHER was installed, maintained, and operated in a satisfactory manner to minimize emissions to the ambient air. Recommended Best Management Practices for Drum-top Crushers and Recommended Best Management Practices for Lamp Handling & Storage were specified in Appendices 1 and 2 [SC. III.1]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
48. Not in compliance – JMVT did not demonstrate the permittee maintained and operated EU-BULBCRUSHER according to the manufacturer's specifications and procedures [SC. III.2]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
49. Not in compliance- JMVT did not demonstrate the EU-BULBCRUSHER was located a minimum of 50 feet from the property line; 300 feet from any existing places of residence or private or public assembly; 500 feet from a school, apartment building, or institutional occupancy; and not less than 1000 feet from a hospital or nursing home [SC. III.3]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
50. Not in compliance –JMVT did not demonstrate the permittee minimized the time necessary to change-out the 55-gallon drum portion of EU-BULBCRUSHER. All drum change-outs were performed according to the manufacturer's specifications and procedures [SC. III.4]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
51. Not in compliance- JMVT did not demonstrate the permittee completely replaced the carbon within the activated carbon filter or replaced the entire activated carbon filter, a minimum of once every two calendar years. Alternatively, the permittee demonstrated at the end of two years, and at least once per year thereafter, that the activated carbon filter was still effective [SC. III.5]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
52. Not in compliance – JMVT did not demonstrate all broken glass and metal pieces collected in the 55-gallon drum portion of EU-BULBCRUSHER were properly handled, transported, and

- disposed of in accordance with all applicable State rules and federal regulations [SC. III.6]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
53. Not in compliance- JMVT did not demonstrate the permittee did not operate EU-BULBCRUSHER unless the bag filter followed in series by a HEPA filter and an activated carbon filter were installed, maintained, and operated in a satisfactory manner [SC. IV.1]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
54. Not in compliance- JMVT did not demonstrate the permittee did not operate EU-BULBCRUSHER with a warped drum that prevented the crushing unit from sealing flush with the drum top. The permittee verified that the seal between the crusher unit and the drum was tight before each use, according to manufacturer's recommended procedures [SC. IV.2]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
55. Not in compliance - JMVT did not demonstrate the permittee sealed the feed chute of EU-BULBCRUSHER with a cap or other similar device whenever the unit was not in use [SC. IV.3]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
56. Not in compliance – JMVT did not demonstrate if the activated carbon filter or the carbon within the filter was not replaced at the end of two calendar years, the permittee demonstrated, to the satisfaction of the AQD, the effectiveness of the activated carbon filter. If control device destruction efficiency testing was required in order to complete this demonstration, the permittee submitted to the AQD a methodology outlining how the testing was performed, no less than 60 days prior to completing the demonstration. The AQD must have approved the testing methodology prior to completing the demonstration. Submittal of a complete report of the demonstration results was submitted to the AQD within 60 days following the last date of the demonstration [SC. V.1]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
57. Not in compliance – JMVT did not demonstrate the permittee kept the following information on a monthly basis for EU-BULBCRUSHER:
- a) The number and size of fluorescent light bulbs crushed per calendar day.
  - b) The number and size of fluorescent light bulbs crushed per calendar month.
  - c) The number and size of fluorescent light bulbs crushed per 12-month rolling time period as determined at the end of each calendar month.
- \*\*\*And permittee kept the records in the format specified in Appendix 3. [SC. VI.1]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
58. Not in compliance – JMVT did not demonstrate the permittee kept, in a satisfactory manner, records indicating when the HEPA filter, the carbon or the entire activated carbon filter was replaced [SC. VI.2]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
59. Not in compliance – JMVT did not demonstrate the permittee kept, in a satisfactory manner, transportation, and disposal records of all broken glass and metal pieces collected in the 55-gallon drum portion of EU-BULBCRUSHER [SC. VI.3]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
60. Not in compliance – JMVT did not demonstrate the permittee monitored and recorded, in a satisfactory manner, the room temperature, on an hourly basis, while EU-BULBCRUSHER was operating. The permittee kept all records on file at the facility and made them available to the Department upon request [SC. VI.4]. The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
61. In compliance- JMVT demonstrated the exhaust gases from EU-BULBCRUSHER were not directly discharged to the ambient air at any time [SC. VII.1]. Visual inspection indicated compliance.
62. Not in compliance – JMVT did not demonstrate permittee considered the Best management practice recommendations provided in Appendices 1 and 2 while operating the permitted EU-BULBCRUSHER [Appendices 1 & 2].

#### Inspection Areas of Focus:

1. Buildings and controlled TestCells – Engine Dynamo recordkeeping - The Company was issued a violation notice for failing to provide emission records after failing to respond to phone call reminder to fulfill the AQD request.
2. FG-ENGINES-The equipment and area housing the FGENGINES was kept in satisfactory manner.
3. EU-BULBCRUSHER-The equipment and area housing the EUBULBCRUSHER was kept in satisfactory manner.
4. Visible emissions on Bldg. and stacks. There were no visible emissions at the time of inspection.

**DETERMINATION**

Based on the inspection and unavailable emission records, the Johnson-Matthey facility is determined not in compliance with the permits requirement. In general, the facility was maintained in a satisfactory manner. The company has been cited for recordkeeping violation.

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Updated Report after the records were submitted:

INSPECTED BY	:	Terseer Hemben, MDEQ
PERSONNEL PRESENT	:	Mark Tomczyk, EHS/Coordinator
CONTACT PHONE NUMBER	:	(734)-946-9856
FACILITY FAX	:	(734) 946-8312
DATES OF INSPECTION	:	5/30/2014
SRN: B8747		

**FACILITY BACKGROUND: JOHNSON-MATTHEY TESTING.**

I arrived at the facility at 1120 hours. The purpose of the visit was to conduct an annual inspection for compliance per permit requirements. Temperature at the hour was 68 F with the wind speed averaging 5 mph coming from Variable directions. Johnson-Matthey is located at 12600 Universal Drive in Taylor. Johnson-Matthey operates internal combustion engines in test cells in association with dynamometer testing. The testing process emits criteria pollutants. This company, however, is subject to permitting exemptions on certain equipment and operates as a 208a source. The Company upgraded all the TestCells to operating with catalytic converter system as control device. The facility also installed and uses dilution technology for more environmentally friendly discharge of pollutants to the ambient air. The permits reflect the changes made.

**COMPLAINT/COMPLIANCE HISTORY:**

Johnson-Matthey Testing has been a source of citizen air quality complaints, but no violation has been associated with their operational process.

**OUTSTANDING CONSENT ORDERS:**

None

**OUTSTANDING LOV'S:**

None

**OPERATING SCHEDULE/PRODUCTION RATE:**

The facility is capable of operating 24 hours per day, 365 days per year. However, currently, the facility is limited by its workload that has reduced greatly with the declining economy.

**PROCESS DESCRIPTION:**

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methodologies of internal combustion engine rating and the catalyst testing is the extended period of time for testing catalysts. Performance requires extra run-time on catalysts. All testing take place in dynamometer test cells. Each test cell contains a dynamometer which is an electrical device for measuring various mechanical performance characteristics of an engine. The dynamometer itself does not have associated emissions. Emissions from the source are attributed to the engines. The emissions from each cell are exhausted through stacks.

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The exhaust stacks are characterized by the following common features:

- An inside diameter of 12 inches
- A height above grade of 35 feet
- An average exhausts temperature of 800 deg. F.
- An average exhaust flow rate of 1600 acfm

Johnson Matthey added an exhaust gas dilution mechanism to its exhaust process. The dilution machine takes in fresh ambient air and mixes with exhaust gases from the TestCells before discharging to the ambient air through the stacks. The dilution technology facilitates dilution of pollutants before discharge, and subsequently improves dispersion of pollutants in low concentration into the ambient air.

#### EQUIPMENT AND PROCESS CONTROLS:

Johnson – Matthey approximates its fuel consumption to amount to 1, 250, 000 gallons or more, per year. This value poses as the worst case condition, when maximum use is made of 6.8 Liter V-10 Modular engines on continuous basis. Modular engines provide the greatest displacement among other Ford engines.

#### APPLICABLE RULES/PERMIT# 149-02I; 43-07; & 170-13 CONDITIONS:

Based on the Permit conditions, the inspection observed the operation was in:

1. In compliance – JMVT demonstrated there has not been any modification to any TESTCELLS system or process at the facility in the last 24 months. Mark stated there had been no modifications of equipment at the facility.
2. In compliance – JMVT demonstrated that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed 35.9 tpy limit calculated on monthly and 12-month rolling time period as determined by the end of each calendar month. Records submitted by the JMVT indicated the NO<sub>x</sub> emission from the FGTESTCELLS was 1.93 tons per year [Yearly Summary Sheet Pg. 1 attached].
3. In compliance – JMVT demonstrated that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed 0.35 lbs. gasoline per gallon limit without catalytic control determined based on protocol testing [SC 1.1b]. Records submitted by the JMVT indicated the NO<sub>x</sub> emission from the FGTESTCELLS without catalytic control was 0.35 lbs. /gallon [Yearly Summary Sheet Pg. 2 attached].
4. In compliance – JMVT demonstrated that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed 0.07 lbs. per gallon gasoline limit with catalytic control determined based on protocol testing [SC 1.1c]. Records submitted by the JMVT indicated the NO<sub>x</sub> emission from the FGTESTCELLS with catalytic control was 0.07 lbs. /gallon [Yearly Summary Sheet Pg. 2 attached].
5. In compliance – JMVT demonstrated that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed 0.0200 lbs. per gallon diesel limit with catalytic control determined based on protocol testing [SC 1.1d]. Records submitted by the JMVT indicated the NO<sub>x</sub> emission from FGTESTCELLS was 0.007 lbs. /gallon [Yearly Summary Sheet Pg. 2 attached].
6. In compliance – JMVT demonstrated that NO<sub>x</sub> emissions from the FGTESTCELLS did not exceed 0.0667 lbs. per gallon diesel limit without catalytic control determined based on protocol testing [SC 1.1e]. Records submitted by the JMVT indicated NO<sub>x</sub> emission from the FGTESTCELLS without catalytic control was 0.0116 lbs. /gallon [Yearly Summary Sheet Pg. 2 attached].

7. In compliance –JMVT demonstrated that NOx emissions from the FGTESTCELLS did not exceed 681.6 lbs. per million cubic feet of natural gas limit with catalytic control determined based on protocol testing [SC 1.f]. Records submitted by the JMVT indicated NOx emissions from the FGTESTCELLS were 681.6 lbs. /mmcf. [Yearly Summary Sheet Pg. 2 attached].
8. In compliance- JMVT demonstrated that NOx emissions from the FGTESTCELLS did not exceed 0.015 lbs. per gallon ethanol limit with catalytic control determined based on protocol testing [SC 1.1g]. Records submitted by the JMVT indicated NOX emissions from the FGTESTCELLS were 0.015 lbs. /gallon [Yearly Summary Sheet Pg. 2 attached].
9. In compliance –JMVT demonstrated that NOx emissions from the FGTESTCELLS did not exceed 2.8 lbs. per 1000 gallons propane limit with catalytic control determined based on protocol testing [SC 1.1h]. Records submitted by the JMVT indicated NOX emission from the FGTESTCELLS was 2.8 lbs. per 1000 gallons propane [Yearly Summary Sheet Pg. 2 attached].
10. In compliance – JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 20.5 lbs. per hour limit calculated on monthly basis determined by the end of each calendar month [SC 1.1i]. Records submitted by the JMVT indicated the CO emission from the FGTESTCELLS was 0.019 lbs. per hour limit-month [Monthly Summary Sheet Pg. 1 attached].
11. In compliance – JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 0.1752 lbs. per gallon limit on gasoline, with catalytic controlled calculated based on protocol testing [SC 1.1j]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS were 0.1752lbs. /gallon limits [Yearly Summary Sheet Pg. 2 attached].
12. In compliance – JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 1.752 lbs. per gallon limit on gasoline, without catalytic controlled calculated based on protocol testing [SC 1.1k]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS was 1.752 limit [Yearly Summary Sheet Pg. 2 attached].
13. In compliance –JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 39.9 lbs. per Million cubic feet limit of natural gas with catalytic control determined based on protocol testing. [SC 1.1l]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS were 39.9 lbs. Million cubic ft. [Yearly Summary Sheet Pg. 2 attached].
14. In compliance- JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 0.19 lbs. per 1000 gallons limit of propane, with catalytic controlled calculated based on protocol testing [SC 1.1m]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS were 0.19 lbs. per gallons limit [Yearly Summary Sheet Pg. 2 attached].
15. In compliance – JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 0.23 lbs. per gallon limit of ethanol, with catalytic control calculated based on protocol testing [SC 1.1n]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS were 0.23 lbs. per gallon limit [Yearly Summary Sheet Pg. 2 attached].
16. In compliance-JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 0.1434 lbs. per gallon limit of diesel, with catalytic control calculated based on protocol testing [SC 1.1o]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS were 0.0014 lbs. /gallon limit [Yearly Summary Sheet Pg. 2 attached].
17. In compliance- JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 1.434 lbs. per gallon limit of diesel, without catalytic controlled calculated based on protocol testing [SC 1.1p]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS were 1.434 lbs. per gallon limit [Yearly Summary Sheet Pg. 2 attached].
18. In compliance – JMVT demonstrated that SO2 emissions from the FGTESTCELLS did not exceed 6.81 lbs. per hour limit determined by the end of each calendar month [SC 1.1q]. Records submitted by the JMVT indicated the SO2 emissions from the FGTESTCELLS were 6.81 lbs. per hour [Monthly Summary Sheet Pg. 1 attached].
19. In compliance – JMVT demonstrated that Benzene emissions from

the FGTESTCELLS did not exceed 740.0 lbs. per year limit based on 12-month rolling time period as determined at the end of each calendar month [SC 1.1r]. Records submitted by the JMVT indicated the Benzene emissions from the FGTESTCELLS were 59.30 lbs. per year [Yearly Summary Sheet Pg. 2 attached].

20. In compliance- JMVT demonstrated that Benzene emissions from the FGTESTCELLS did not exceed 0.0047 lbs. per gallon gasoline limit with catalytic control determined based on protocol testing [SC 1.1s]. Records submitted by the JMVT indicated the Benzene emissions from the FGTESTCELLS was 0.0047 lbs. per gallon limit [Yearly Summary Sheet, pg. 2 attached]
21. In compliance – JMVT demonstrated that Benzene emissions from the FGTESTCELLS did not exceed 0.031 lbs. per gallon diesel limit without catalytic control determined based on protocol testing [SC 1.1t]. Records submitted by the JMVT indicated the Benzene emissions from the FGTESTCELLS was 0.031 lbs. per gallon limit [Yearly Summary Sheet, pg. 2 attached]
22. In compliance – JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 0.1434 lbs. per gallon limit on diesel, with catalytic control calculated based on protocol testing [SC 1.1u]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS was 0.0014 lbs. per gallon limit [Yearly Summary Sheet, pg. 2 attached]
23. In compliance – JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 0.1752 lbs. per gallon limit of gasoline, without catalytic controlled calculated based on protocol testing [SC 1.1v]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS was 0.1752 lbs. per gallon limit [Yearly Summary Sheet, pg. 2 attached]
24. In compliance – JMVT demonstrated that CO emissions from the FGTESTCELLS did not exceed 0.1434 lbs. per gallon limit of diesel, with catalytic control calculated based on protocol testing [SC 1.1w]. Records submitted by the JMVT indicated the CO emissions from the FGTESTCELLS was 0.1434 lbs. per gallon limit [Yearly Summary Sheet, pg. 2 attached]
25. In compliance- JMVT demonstrated the maximum amount of fuel usage for the FGTESTCELLS did not exceed 1,000 gallons per 12 month rolling time period in test cells which have no catalytic control as determined at the end of each calendar month [Condition 1.2]; and Permittee did not use more than 2000 gallons of diesel fuel per rolling 12-month time period in test cells that have no catalytic control. Records submitted by the JMVT indicated the fuel usage for the FGTESTCELLS was 208 lbs. per gallon limit, and no significant usage was recorded for the uncontrolled cells [Yearly Summary Sheet, pg. 2 attached]
26. In compliance – JMVT demonstrated the sulfur content of all gasoline used in FGTESTCELLS did not exceed 0.085 percent by weight, and the Sulfur content of all diesel used in FGTESTCELLS did not exceed 0.28 percent by weight [Condition 1.3]. Records submitted by the JMVT indicated the sulfur content for the fuel consumed in FGTESTCELLS was 0.04 percent limit [Spreadsheet is attached]. [Yearly Summary Sheet, pg. 2 attached].
27. In compliance – JMVT demonstrated the permittee equipped and maintained each emission unit included in FGTESTCELLS with a catalytic converter, and is operated in a satisfactory manner with each catalytic converter operated at a minimum temperature of 600F based on an hourly average for diesel [SC 1.4]. Records submitted by the JMVT indicated the temperature profile for the FGTESTCELLS was above 600 F, except for Cell5 that indicated temperature average below 600 F for consecutively 3 hours in 2013 [Monthly Summary Sheet attached]
28. In compliance- JMVT demonstrated the permittee monitored either Electronically, using a strip chart recorder or manual logging the exhaust gas Temperature immediately before and after each catalytic bed, and temperature recordings were made at least once per every 15 min (4 per hour) [SC 1.5]. Records submitted by the JMVT indicated the exhaust temperature for the FGTESTCELLS was profiled accordingly [Monthly Summary Sheet attached].
29. In compliance- JMVT demonstrated the permittee kept in a satisfactory manner the following records for FG-TESTCELLS:
  - (a) The amount (in gallons) of diesel fuel used in FG-TESTCELLS without catalytic control and the average hour usage rate of diesel fuel without catalytic control on monthly basis.

- (b) Total aggregated operating hours for all test cells, compiled on monthly basis.
- (c) The amount (in gallons) of gasoline fuel used in FG-TESTING without catalytic control and the average hour usage of gasoline without catalytic control, compiled on monthly basis.
- (d) The amount (in gallons) of ethanol used in FG-TESTCELLS and the average hourly usage rate of ethanol compiled on monthly basis.
- (e) The amount (in cubic feet) of natural gas used in FG-TESTCELLS and the average hourly usage rate of natural gas compiled on monthly basis.
- (f) Total amount (in gallons) of propane fuel used in FG-TESTCELLS and the average hourly usage rate of propane fuel compiled on a monthly basis.
- (g) Monthly NOx emission calculation records for FG-TESTCELLS.
- (h) Monthly CO emission calculation records for FG-TESTCELLS.
- (i) Monthly SO2 emission calculation records for FG-TESTCELLS.
- (j) Monthly benzene emission calculation records for FG-TESTCELLS.
- (k) Hourly records of the inlet and outlet temperatures in each catalytic converter.
- (l) Records of the maximum sulfur content in the fuel for each delivery [SC. 1.6].  
Records submitted by the JMVT indicated the all records were kept according to the permit format [Spread Sheet attached].

30. In compliance – JMVT demonstrated the exhaust gases from stacks SV-TESTCELLS1-2 to SV-TESTCELLS 7-8 are discharged unobstructed vertically upwards to the ambient [Condition 1.13 (a-e)]. Visual inspection confirmed the proper discharge of gas to the ambient air.
31. In compliance- JMVT demonstrated within 90 days of startup of this permitted process, permittee verified NOx emission rates from EU-TESTCELLS8 by testing at owner's expense in accordance with the Department's requirements, and results for the said testing were communicated to the Department within 60 days after the test date [SC. 1.8] Response to this requirement is located in the cover letter.  
General Permit# 31-07B: FG-ENGINES
32. In compliance – JMVT demonstrated the maximum NOx emissions in FG-ENGINES were 515 lbs. per gallon based on Test method [SC. 1.1]. Records submitted by JMVT indicated the emissions were less than permitted values, and many instances fell below significant recording values [Spreadsheet attached in CD and prints].
33. In compliance- JMVT demonstrated permittee burned only diesel fuel in FG-ENGINES [SC. 1.2]. Records submitted by JMVT confirmed the type of fuel used in FGTESTCELLS.
34. In compliance – JMVT demonstrated, if any electricity produced by FG-ENGINES was sold to a Utility Power distribution system; and the sulfur content of diesel fuel used did not exceed 0.05 percent by weight on an annual average, and annual average was calculated as specified in 40 CFR 72.7(d)(3) [SC. 1.3]. Records submitted by JMVT indicated no electricity was generated for sale.
35. In compliance – JMVT demonstrated the combined diesel fuel use for all units included in FG-ENGINES did not exceed 136,000 gallons per 12-months rolling time period [SC. 1.4]. Records submitted by JMVT indicated the average combined diesel fuel use for all units per 12 months rolling period was 17384 gallons [calculated from the Tab pg. 1, attached].
36. In compliance – JMVT demonstrated permittee operated FG-ENGINES in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions during periods of startup, shutdown and malfunction [SC.1.5]. Records submitted by the Company indicated compliance with the manufacturer's operational recommendations.
37. In compliance- JMVT demonstrated the total capacity from each unit included in FG-ENGINES did not exceed 5 MW [SC. 1.6]. Records submitted from the Company indicated was below 5 MW Spreadsheet located in CD attached.
38. In compliance – JMVT demonstrated verification of NOx emission limit (515 lbs. NOx per 1000 gallon) of fuel used from one or more representative units of FG-ENGINES at owner's expense was performed in accordance with Department requirements, and results from the testing were submitted to the Department within 60 days following the last date of the test [SC. 1.7]. The information is on file.
39. In compliance- JMVT demonstrated permittee calibrated maintained and operated in a satisfactory manner a device to monitor and record, the fuel use for FG-ENGINES on a monthly basis [SC. 1.8]. The information presented in spreadsheet confirmed compliance.
40. In compliance- JMVT demonstrated permittee kept in a satisfactory manner, records of the date, duration, and description of any malfunction, any maintenance performed and any

- testing results for FG-ENGINES, and records were kept on file for 5 years and available for the Department upon request [SC. 1.9]. Record submitted by JMVT confirmed compliance.
41. In compliance – JMVT demonstrated if any electricity produced by FG-ENGINES was sold to a utility power distribution to a utility power distribution system, the permittee kept records of the sulfur content calculated in percent by weight on an annual average as required by SC. 1.3, and records were kept on file for 5 years and made available to the Department upon request [SC. 1.10]. The Company responded no electricity produced was sold to utility power distribution.
  42. In compliance – JMVT demonstrated the permittee kept, in a satisfactory manner, monthly and 12 month rolling time average fuel use records for FG-ENGINES; the records indicated the total amount of fuel used in FG-ENGINES, and records were kept on file for five years and available to the Department upon request [SC. 1.11]. Monthly and Yearly summary records are located in the spreadsheet.
  43. In compliance – JMVT demonstrated the exhaust gases from FG-ENGINES were discharged unobstructed vertically upwards to the ambient air [SC. 1.12]. Visual inspection confirmed compliance.
  44. In compliance – JMVT demonstrated if permittee modified FG-ENGINES, and records pertaining to modifications were kept on file and made available to the Department upon request [SC. 1.13]. The Company responded the no modification to FG-ENGINES was made.

#### Permit To Install# 170-13 EU-BULBCRUSHER

45. In compliance – JMVT demonstrated permittee did not crush more than the equivalent of 150 eight-foot fluorescent light bulbs in EU-BULBCRUSHER per calendar day. [SC. II.1]. Response from JMVT indicated compliance in spreadsheet attached.
46. In compliance – JMVT demonstrated the permittee did not crush more than the equivalent of 3000 eight-foot fluorescent light bulbs in EU-BULBCRUSHER per 12-month rolling time period [SC. II.2]. Response from the Company indicated compliance.
47. In compliance – JMVT demonstrated the EU-BULBCRUSHER was installed, maintained, and operated in a satisfactory manner to minimize emissions to the ambient air. Recommended Best Management Practices for Drum-top Crushers and Recommended Best Management Practices for Lamp Handling & Storage were specified in Appendices 1 and 2 [SC. III.1]. Response from the Company indicated compliance.
48. In compliance – JMVT demonstrated the permittee maintained and operated EU-BULBCRUSHER according to the manufacturer's specifications and procedures [SC. III.2]. Response from the company indicated compliance.
49. In compliance- JMVT demonstrated the EU-BULBCRUSHER was located a minimum of 50 feet from the property line; 300 feet from any existing places of residence or private or public assembly; 500 feet from a school, apartment building, or institutional occupancy; and not less than 1000 feet from a hospital or nursing home [SC. III.3]. Response from the Company indicated compliance.
50. In compliance –JMVT did not need to demonstrate the permittee minimized the time necessary to change-out the 55-gallon drum portion of EU-BULBCRUSHER. All drum change-outs were performed according to the manufacturer's specifications and procedures [SC. III.4]. The Company indicated the drum was yet to be changed.
51. In compliance- JMVT did not need to demonstrate the permittee completely replaced the carbon within the activated carbon filter or replaced the entire activated carbon filter, a minimum of once every two calendar years. Alternatively, the permittee demonstrated at the end of two years, and at least once per year thereafter, that the activated carbon filter was still effective [SC. III.5]. The Company indicated the process was commissioned less than 2 years. Replacement is yet to be due.
52. In compliance – JMVT did not need to demonstrate all broken glass and metal pieces collected in the 55-gallon drum portion of EU-BULBCRUSHER were properly handled, transported, and disposed of in accordance with all applicable State rules and federal regulations [SC. III.6]. The maintenance schedule was yet to be due.
53. In compliance- JMVT demonstrated the permittee did not operate EU-BULBCRUSHER unless the bag filter followed in series by a HEPA filter and an activated carbon filter were installed, maintained, and operated in a satisfactory manner [SC. IV.1]. The Company confirmed compliance in the attached response.
54. In compliance- JMVT demonstrated the permittee did not operate EU-BULBCRUSHER with a warped drum that prevented the crushing unit from sealing flush with the drum top. The

- permittee verified that the seal between the crusher unit and the drum was tight before each use, according to manufacturer's recommended procedures [SC. IV.2]. Response from the Company confirmed compliance.
55. In compliance - JMVT demonstrated the permittee sealed the feed chute of EU-BULBCRUSHER with a cap or other similar device whenever the unit was not in use [SC. IV.3]. Response from the Company confirmed compliance.
56. In compliance – JMVT did not need to demonstrate if the activated carbon filter or the carbon within the filter was not replaced at the end of two calendar years, the permittee demonstrated, to the satisfaction of the AQD, the effectiveness of the activated carbon filter. If control device destruction efficiency testing was required in order to complete this demonstration, the permittee submitted to the AQD a methodology outlining how the testing was performed, no less than 60 days prior to completing the demonstration. The AQD must have approved the testing methodology prior to completing the demonstration. Submittal of a complete report of the demonstration results was submitted to the AQD within 60 days following the last date of the demonstration [SC. V.1]. The unit was yet to be due for maintenance.
57. In compliance – JMVT demonstrated the permittee kept the following information on a monthly basis for EU-BULBCRUSHER:
- The number and size of fluorescent light bulbs crushed per calendar day.
  - The number and size of fluorescent light bulbs crushed per calendar month.
  - The number and size of fluorescent light bulbs crushed per 12-month rolling time period as determined at the end of each calendar month.
- \*\*\*And permittee kept records in the format specified in Appendix 3. [SC. VI.1]. The records were electronically kept and accessed in the required format.
58. In compliance – JMVT did not need to demonstrate the permittee kept, in a satisfactory manner, records indicating when the HEPA filter, the carbon or the entire activated carbon filter was replaced [SC. VI.2]. The filters were not yet due for replacement.
59. In compliance – JMVT did not need to demonstrate the permittee kept, in a satisfactory manner, transportation, and disposal records of all broken glass and metal pieces collected in the 55-gallon drum portion of EU-BULBCRUSHER [SC. VI.3]. The drum was not due for maintenance at the time of inspection.
60. In compliance – JMVT demonstrated the permittee monitored and recorded, in a satisfactory manner, the room temperature, on an hourly basis, while EU-BULBCRUSHER was operating. The permittee kept all records on file at the facility and made them available to the Department upon request [SC. VI.4]. The records submitted indicated compliance with the required format.
61. In compliance- JMVT demonstrated the exhaust gases from EU-BULBCRUSHER were not directly discharged to the ambient air at any time [SC. VII.1]. Visual inspection indicated compliance.
62. In compliance – JMVT demonstrated permittee considered the Best management practice recommendations provided in Appendices 1 and 2 while operating the permitted EU-BULBCRUSHER [Appendices 1 & 2]. Response from JMVT indicated compliance with the permit requirements.

#### **Inspection Areas of Focus:**

- Buildings and controlled TestCells – Engine Dynamo recordkeeping –the building was kept in a satisfactory manner.
- FG-ENGINES-The equipment and area housing the FGENGINES was kept in satisfactory manner.
- EU-BULBCRUSHER-The equipment and area housing the EUBULBCRUSHER was kept in satisfactory manner.
- Visible emissions on Bldg. and stacks. There were no visible emissions at the time of inspection.

#### **DETERMINATION**

Based on the inspection and records provided by JMVT, the Johnson-Matthey facility was determined to be in compliance with the permits requirement. In general, the facility was maintained in a satisfactory manner. The company was cited for recordkeeping violation. This complaint is resolved.

NAME jh

DATE 8/8/2014 SUPERVISOR w.m.