

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

N775525359

FACILITY: Johnson Matthey Vehicle Testing & Development LLC		SRN / ID: N7755
LOCATION: 25201 BREST RD, TAYLOR		DISTRICT: Detroit
CITY: TAYLOR		COUNTY: WAYNE
CONTACT: Nate Ustick , Operations Director		ACTIVITY DATE: 05/30/2014
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
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 : 5/29/2014
 SRN: N7755

FACILITY BACKGROUND: JOHNSON-MATTHEY VEHICLE TESTING/CATALYST AGING.

I arrived at the facility at 25201 Brest Street, Taylor, MI at 1220 hours. The purpose of the visit was to conduct an annual inspection for compliance per permit# 31-07 requirements. Temperature at the hour was 68 F with the wind speed averaging 5 mph coming from Variable directions. Johnson-Matthey Vehicle Testing & Development (JMVT) operates internal combustion engines in test cells in association with dynamometer testing. Mr. Tomczyk was [articipating in a meeting, hence I visited the site to perform surveillance on opacity levels. The testing process emits criteria pollutants. This company is subject to Synthetic Opt out permitting on process and equipment. Precisely, the Company installed 2 ovens 2 Durability Short Test cells, 7 Test Cells out of which 2 are non-functional, and 1 Durability analysis bench. I left the area at 1235 hours and returned to the 12600 Universal Drive address expecting to evaluate the facility compliance using requested recordkeeping data.

COMPLAINT/COMPLIANCE HISTORY:

JMVT 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, the facility is limited by its workload that has reduced greatly.

PROCESS DESCRIPTION:

JMVT 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, O2, hydrocarbons, and NOx. Oxygen levels are recorded 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

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:

APPLICABLE RULES/PERMIT# 31-07 CONDITIONS:

Based on the Permit conditions, the inspection observed the Johnson-Matthey Vehicle Testing & Development (JMVT) operation was in:

1. In compliance - JMVT demonstrated there has not been any modification to any FG-TESTCELLS system or process at the facility in the last 12 months. Mr. Tomczyk stated there were no modifications made to equipment.
2. Not in compliance- JMVT did not demonstrate that the CO emissions from the FG-TESTCELLS do not exceed the 44.3 tpy limit calculated on monthly and 12-month rolling time period as determined by the end of each calendar month. The Company did not provide emission records for the last 12 months [Condition I.1]. A violation notice was issued to JMVT after being reminded through phone message to fulfill the Permit conditions.
3. Not in compliance –JMVT did not demonstrate Permittee only burned gasoline in FG-TESTCELLS [Condition II.2]. The Company did not provide emission records for the last 12 months. A violation notice was issued to JMVT after being reminded through phone message to fulfill the Permit conditions.
4. Not in compliance – JMVT did not demonstrate, for any emission unit included in FG-TESTCELLS was not operated unless a catalytic converter was installed, maintained and operated on that unit in a satisfactory manner. Satisfactory operation of each catalytic converter included maintaining a minimum temperature of 600 F based on hourly average [Condition IV.1]. The Company did not provide emission records for the last 12 months. A violation notice was issued to JMVT after being reminded through phone message to fulfill the Permit conditions.
5. Not in compliance- JMVT did not demonstrate the permittee installed, calibrated, maintained, and operated in a satisfactory manner, a device to monitor and record either electronically, using a strip chart recorder, or by manual logging the exhaust gas temperature immediately before and after each catalytic bed. Temperature readings were recorded at least once every 15 minutes (4 per hour) [Condition IV.2]. The Company did not provide emission records for the last 12 months. A violation notice was issued to JMVT after being reminded through phone message to fulfill the Permit conditions.
6. Not in compliance – JMVT did not demonstrate the permittee completed all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition [SC. VI.1]. The Company did not provide emission records for the last 12 months. A violation notice was issued to JMVT after being reminded through phone message to fulfill the Permit conditions.
7. Not in compliance – JMVT did not demonstrate the permittee monitored and recorded, in a satisfactory manner, the inlet and outlet temperatures in each catalytic converter on an hourly basis [SC. VI.2]. The Company did not provide emission records for the last 12 months. A violation notice was issued to JMVT after being reminded through phone message to fulfill the Permit conditions.
8. Not in compliance – JMVT did not demonstrate the permittee kept the following information on a monthly basis for FG-TESTCELLS:
 - a) A record of the days of operation.

- b) Gallons of gasoline used per month and 12-month rolling time period.
- c) CO emission calculations using the worst case Johnson Matthey emission factor of 2.81 lbs. CO/gallon gasoline and a catalytic converter control efficiency of 90% to determine the monthly emission rate in tons per calendar month
- d) CO emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month;

***And the permittee kept the records in a format acceptable to the AQD District Supervisor; The permittee

kept all records on file and made them available to the Department upon request [SC. VI.3]. The

Company did not provide emission records for the last 12 months. A violation notice was issued to JMVT

after being reminded through phone message to fulfill the Permit conditions.

9. Not in compliance – JMVT did not demonstrate the permittee kept, in a satisfactory manner, records of the

inlet and outlet temperatures in each catalytic converter on an hourly basis, as required by SC VI.2. The

permittee kept all records on file and made them available to the Department upon request [SC. VI.4]. The

Company did not provide emission records for the last 12 months. A violation notice was issued to JMVT

after being reminded through phone message to fulfill the Permit conditions.

10. Not in compliance – JMVT did not demonstrate the permittee kept, in a satisfactory manner, records of

the maximum lead content in the fuel for each delivery. The permittee kept all records on file and made

them available to the Department upon request [SC. VI.5]. The Company did not provide emission records

for the last 12 months. A violation notice was issued to JMVT after being reminded through phone message

to fulfill the Permit conditions.

9. In compliance – JMVT did not demonstrate the exhaust gases from the SV-TESTCELLS stack were discharged unobstructed vertically upwards to the ambient air [SC. VIII.1]. The

Company did not provide emission records for the last 12 months. A violation notice was issued to JMVT after being reminded through phone message to fulfill the Permit conditions.

10. How many employees work at the facility? No response was provided

Inspection Areas of Focus:

- 1. Buildings and controlled Testcells – Engine Dynamo recordkeeping – records were not provided
- 2. Visible emissions on Bldgs and stacks. There were no visible emissions from the facility.

FINAL COMPLIANCE DETERMINATION:

Based on the inspection and failure to provide requested emission records to the AQD, the JMVT facility did not operate in compliance with the permit conditions requirement during the last 12 months period. However, the facility was maintained in a satisfactory manner. The company was issued a violation notice requesting compliance within 21 calendar days. JMVT did not operate in compliance with air pollution control requirements.

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Updated report after records were submitted.
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INSPECTED BY : Terseer Hemben, MDEQ
PERSONNEL PRESENT : Mark Tomczyk, EHS/Coordinator
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DATES OF INSPECTION : 5/29/2014
SRN: N7755

FACILITY BACKGROUND: JOHNSON-MATTHEY VEHICLE TESTING/CATALYST AGING.

I arrived at the facility at 25201 Brest Street, Taylor, MI at 1120 hours. The purpose of the visit was to conduct an annual inspection for compliance per permit# 31-07 requirements. Temperature at the hour was 68 F with the wind speed averaging 5 mph coming from Variable directions. 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 Synthetic Opt out permitting on process and equipment. Precisely, the Company installed 2 ovens 2 Durability Short Test cells, 7 Test Cells out of which 2 are non-functional, and 1 Durability analysis bench.

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, the facility is limited by its workload that has reduced greatly.

PROCESS DESCRIPTION:

Johnson-Matthey Vehicle Testing 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, O₂, hydrocarbons, and NO_x. Oxygen levels are recorded 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.
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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:**APPLICABLE RULES/PERMIT# 31-07 CONDITIONS:**

Based on the Permit conditions, the inspection observed the Johnson-Matthey Vehicle Testing & Development (JMVT) operation was in:

1. In compliance - JMVT demonstrated there has not been any modification to any FG-TESTCELLS system or process at the facility in the last 12 months. Mr. Tomczyk stated there were no modifications made to equipment.
2. In compliance- JMVT demonstrated that the CO emissions from the FG-TESTCELLS did not exceed the 44.3 tpy limit calculated on monthly and 12-month rolling time period as determined by the end of each calendar month. [Condition I.1]. Records submitted by JMVT indicated the NOx emission was 0.113 tpy [Summary Sheet, pg. 1].
3. In compliance -JMVT demonstrated permittee only burned gasoline in FG-TESTCELLS [Condition II.2]. Records submitted by JMVT indicated the JMVT only burned gasoline in the FGTESTCELLS [Summary Sheet, pg. 1].
4. In compliance – JMVT demonstrated, for any emission unit included in FG-TESTCELLS was not operated unless a catalytic converter was installed, maintained and operated on that unit in a satisfactory manner. Satisfactory operation of each catalytic converter included maintaining a minimum temperature of 600 F based on hourly average [Condition IV.1] Response from JMVT indicated the facility operated maintaining minimum of 600 F [Cover Letter].
5. In compliance- JMVT demonstrated the permittee installed, calibrated, maintained, and operated in a satisfactory manner, a device to monitor and record either electronically, using a strip chart recorder, or by manual logging the exhaust gas temperature immediately before and after each catalytic bed. Temperature readings were recorded at least once every 15 minutes (4 per hour) [Condition IV.2]. Records and data submitted by JMVT indicated the format was followed in compliance.
6. In compliance – JMVT demonstrated the permittee completed all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition [SC. VI.1]. Records and data submitted by JMVT indicated the format was followed in compliance.
7. In compliance – JMVT demonstrated the permittee monitored and recorded, in a satisfactory manner, the inlet and outlet temperatures in each catalytic converter on an hourly basis [SC. VI.2]. Records and data submitted by JMVT indicated the format was followed in compliance.
8. In compliance – JMVT demonstrated the permittee kept the following information on a monthly basis for FG-TESTCELLS:
 - a) A record of the days of operation.
 - b) Gallons of gasoline used per month and 12-month rolling time period.
 - c) CO emission calculations using the worst case Johnson Matthey emission factor of 2.81 lbs. CO/gallon gasoline and a catalytic converter control efficiency of 90% to determine the monthly emission rate in tons per calendar month
 - d) CO emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month;The permittee kept the records in a format acceptable to the AQD District Supervisor; The permittee kept all records on file and made them available to the Department upon request [SC. VI.3]. Records and data submitted by JMVT indicated the format was followed in compliance.
9. In compliance – JMVT demonstrated the permittee kept, in a satisfactory manner, records of the inlet and outlet temperatures in each catalytic converter on an hourly basis, as required by SC VI.2. The permittee kept all records on file and made them available to the Department upon request [SC. VI.4]. Records and data submitted by JMVT indicated the temperatures were digitally recorded and filed in channels at 1 Hz/second [Cover Letter].
10. In compliance – JMVT demonstrated the permittee kept, in a satisfactory manner, records of the maximum lead content in the fuel for each delivery. The permittee kept all records on file and made them available to the Department upon request [SC. VI.5]. Records and data submitted by JMVT indicated the format was followed in compliance.

11. In compliance – JMVT did not need to demonstrate the exhaust gases from the SV-TESTCELLS stack were discharged unobstructed vertically upwards to the ambient air [SC. VIII.1]. The stack set up at the facility is configured to rigidly discharge vertically only.
12. Only One employee works at the facility

Inspection Areas of Focus:

1. Buildings and controlled Testcells – Engine Dynamo recordkeeping – records were submitted. The area was clean and hygienically maintained.
2. Visible emissions on Bldgs and stacks. There were no visible emissions from the facility.

FINAL COMPLIANCE DETERMINATION:

Based on the inspection and evaluated emission records available to the department, the Johnson-Matthey facility was determined to have operated in compliance with the permit requirement during the last 12 months period. In general, the facility was been maintained in a satisfactory manner. The company was sent a violation notice for not providing operation records. However, the violation has been resolved. JMVT is in compliance with the air permit rules.

NAME thDATE 8/8/2014 SUPERVISOR [Signature]