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MAWILA

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

A821731706

FACILITY: McLAREN PERFORMANCE TECHNOLOGIES		SRN / ID: A8217
LOCATION: 32233 W EIGHT MILE RD, LIVONIA		DISTRICT: Detroit
CITY: LIVONIA		COUNTY: WAYNE
CONTACT: Andy Toton , Engineering Manager		ACTIVITY DATE: 10/08/2015
STAFF: Todd Zynda	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted Inspection

INSPECTED BY: Todd Zynda, AQD

PERSONNEL PRESENT: Andy Toton – Engineering Manager

FACILITY PHONE NUMBER: 248-477-6240

FACILITY FAX NUMBER: 248-477-3349

FACILITY WEBSITE: mclarenperformance.com

FACILITY BACKGROUND

McLaren Performance Technologies (McLaren), a subsidiary of Linamar Corporation, is located at 32233 West Eight Mile Road, Livonia, Michigan and has historically provided engine diagnostic testing services to engine manufacturers, automotive suppliers, and catalyst manufacturers. Within the last several years, due to a significant decrease in demand for conventional engine testing, the facility conducts electrical testing of drive train units, transmission components, and electrical engines.

The larger main building (Building 1) currently houses most of the offices, engine test cells 1 through 16, testing equipment, and cold cleaners. Building 2, located east of Building 1, houses electrical motor dynamometers, and cold cleaners. McLaren is one of several commercial and light industrial establishments lining the north and south sides of Eight Mile Road. Residential neighborhoods lie in the rear of these facilities. The residential neighborhood to the south of McLaren borders the facility and is within an estimated 500 feet of the engine test cell building.

McLaren is a major stationary source under 40 Code of Federal Regulations (CFR) Part 52, Prevention of Significant Deterioration (PSD), due to the facility wide potential emissions of carbon monoxide greater than 250 tons per year. The source is subject to Title V (Renewable Operating Permit [ROP]) permitting regulations; the potential to emit for carbon monoxide (CO) exceeds 100 tons per year. McLaren is subject 40 CFR 63, Subpart CCCCC, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities. The potential to emit hazardous air pollutants (HAP) does not exceed 10 tons per year for any individual HAP nor 25 tons per year for all HAPs combined. Therefore the Maximum Achievable Control Technology (MACT) standard (40 CFR 63 Subpart PPPPP) regulating engine test cells/stands at major HAP source is not applicable to this facility. Storage tanks for volatile organic compounds at this facility do not exceed 75 cubic meters (19,813 gallons) volumetric capacity therefore the Standards of Performance for New Stationary Sources (NSPS) for volatile organic liquid storage tanks (40 CFR 60 Subpart Kb) is not applicable to emission units at the source.

PROCESS OVERVIEW

McLaren currently has limited operation of conventional engine test cells. McLaren has the capability to operate sixteen test cells equipped with dynamometers. The test cells were originally designed for testing gasoline fired engines. The original test cell configuration utilized gasoline, the combustion fuel, which is metered to the test stands from one of three above-ground, fixed-roof, vertical storage tanks bordering the main building's eastern edge. The test cells are housed individually in small rooms

outlining the laboratory/workshop areas on the northeast side of the main building, except Cells #14 and #15 which share a common room (and have recently been converted into electronics and networking rooms and not used as test cells). Exhaust gases vent vertically out of the roof of the building (the presence of stacks on the east roof of the main building may be observed from ground level) through stacks ranging 29 feet to 36 feet in height, one stack dedicated for each test cell.

McLaren's clients deliver engines, the engines are secured in one of the test stands, and the engines are operated for the time, loads, and characteristics requested by the client. McLaren measures and records engine performance on computer consoles located outside the door of each engine test cell.

In the original configuration, ten of the test cells (Cell Nos. 2, 3, 6, 8, 9, 11, 12, 14, 15, and 16) are controlled with catalytic converters for CO, nitrogen oxides (NOx), and volatile organic compound (VOC) control and are under permitted fuel restrictions. The catalytic converters are installed and monitored by McLaren and serve as pollution control devices. Catalytic converters control emissions from individual test cells and are inserted into the exhaust pipes leading out from the engine test stand; they appear as annular cylinders with a diameter larger than that of the exhaust pipe and are located between the engine and the muffler. The catalytic converter containers may be unbolted, removed from the exhaust line, replenished with active catalyst, and reinstalled. Cells used for testing engines with dual exhaust are equipped with two converters; one for each exhaust. Test cells No. 1, 4, 5, 7, and 13 contain no fuel restrictions, and emit uncontrolled to the atmosphere. Test cell 10 was recently issued permit to install 67-05B which includes a catalytic converter as emissions control and also allows for the combustion of various fuels (unleaded gasoline, diesel, kerosene, compressed natural gas (CNG) and liquid petroleum gas (LPG)). Under PTI 67-05B, test cell 10 is subject to CO and 1,3 butadiene emission limits along with fuel usage restrictions

Currently, the facility houses seven cold cleaners. Five cold cleaners are located in the main building. Two cold cleaners are located in Building 2 which houses electrical motor testing. All of the cold cleaners vent to the general in-plant environment. A paint spray booth is located in a small room in Building 1. Paint usage is low; the booth is operated to coat engine equipment as necessary. Paint is applied using a high volume low pressure (HVLP) spray gun or applied by hand. Emissions from the paint area are vented through panel filters and a vertical stack.

Building 2 houses two electrical test cells, a transmission parts assembly area, test vehicle storage area, and two cold cleaners. Building 3 has been demolished for construction of an expanded office area and flexible manufacturing complex.

COMPLAINT/COMPLIANCE HISTORY

The most recent inspection occurred on February 24, 2014. At that time the facility was determined to be in noncompliance with daily fuel usage limits and emissions for EU-TestCell10. McLaren provided documentation that the records originally provided at the time of inspection were incorrect and that data transcription error resulted in the misreported emissions and fuel usage.

A ROP deviation occurred on September 27, 2011. At that time the daily fuel usage limit (250 gallons per day) was exceeded at EU-TestCell10. In response to the deviation, McLaren instituted corrective actions to assure that test technicians were aware of the limit and would be notified when approaching the maximum amount of fuel allowed per day.

During February 2010, the facility was determined to be in noncompliance with catalyst monitoring requirements for FG-TestCellsCC (inlet temperature versus catalyst bed temperatures and air to fuel [A/F] ratio requirements). The facility provided additional records that indicated a "FAIL" status for inlet versus catalyst bed temperature. The facility provided a letter that explained that a programming error was responsible for populating the catalyst inlet and bed temperature fields. Additionally, staff was not quality assuring the data. A response letter from the facility explained that a new process for testing would be implemented, that data would be reviewed weekly. The response was considered sufficient and the violation was considered resolved.

During December 2007 the facility was determined to be in noncompliance the daily fuel usage limit for EU-TestCell10. Additionally, it was discovered that the facility is subject to Compliance Assurance

Monitoring (CAM) but a CAM plan was not submitted with the ROP renewal application. A partial CAM plan was been received. One element of the plan that AQD believed was necessary is stack testing of the controlled cells. However, as the facility was not operating at normal capacity needed for testing, incorporating CAM into the ROP was placed on hold. In the meantime, the facility continued to submit quarterly reports of the operational status of the cells. The fuel daily fuel usage limit violation was determined to be the result of data entry error.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VIOLATION NOTICES

None

INSPECTION NARRATIVE

On October 8, 2015 the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) inspector, Mr. Todd Zynda, conducted an unannounced inspection of McLaren located at 32233 West Eight Mile Road, Livonia, Michigan. During the inspection, Mr. Andy Toton, Engineering Manager, provided information and tour of facility operations relating to air quality permits. The inspection was conducted to determine the facility's compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55, ROP No. MI-ROP-A8217-2012 and Permit to Install (PTI) 67-05B. McLaren is permitted for the operation of 16 engine test cells, seven cold cleaners, and a paint area.

At 2:00 PM, AQD staff arrived onsite and performed outside observations. No visible emissions were observed from stacks at the facility. At 2:10 PM AQD staff entered the facility, stated the purpose for the inspection, and was greeted by Mr. Toton. The facility operations were discussed. The facility currently has approximately 89 employees and operates during normal business hours (7 AM to 4:30 PM), although engine testing can occur up to 24 hours a day, depending on client needs.

During the opening meeting, Mr. Toton explained that McLaren is in the process of construction of an expansion of the facility building for additional office space and flexible manufacturing building. Building 3 has been demolished and the expansion of Building 1 has begun. According to Mr. Toton, the portion of Building 1 that houses all test cells will not be affected. Construction activities are anticipated to be completed by 2016.

Mr. Toton discussed the current operational use of each test cell as described below.

- Cell 1 – Converted to electric motor axle testing
- Cell 2 – Converted to electric testing (spin rig)
- Cell 3 – Converted to electric motor gear box testing
- Cell 4 – Not in use, can be used for conventional engine testing
- Cell 5 - Not in use, can be used for conventional engine testing
- Cell 6 – Converted to electrical testing
- Cell 7 – Conventional engine testing
- Cell 8 – Conventional engine testing
- Cell 9 - Conventional engine testing
- Cell 10 - Conventional engine testing.
- Cell 11 – Converted to electric testing (spin rig)
- Cell 12 – Converted to electric testing (spin rig)
- Cell 13 – Not in use, storage
- Cell 14 – Converted to electronics and networking rooms. Stacks are still present.
- Cell 15 – Converted to electronics and networking rooms. Stacks are still present
- Cell 16 – Mechanical electrical motor testing

Following discussion of the test cell operation status, the records required in the ROP and PTI 67-05B were discussed. The requested records were received on October 21, 2015.

Additionally, Permit to Install (PTI) No. 67-05B for EU-TestCell10 was discussed. According to Mr. Toton, the modification of EU-TESTCELL10 was completed in October 2014.

Additionally during the opening meeting, Mr. Zynda notified Mr. Toton that he believed that McLaren is subject to 40 CFR 63, Subpart CCCCCC—National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities. Mr. Zynda stated that this requirement can be incorporated into the ROP upon renewal.

During the opening meeting, the potential for McLaren to operate under an Opt-Out PTI was discussed. Mr. Zynda explained that since McLaren is operating well below Title V thresholds, the company may want to evaluate if an Opt-Out permit would be appropriate. Follow up information regarding the Title V Opt-Out permit was sent to Mr. Toton via email on October 9, 2015 (See Attachment).

Following the discussion of operation status, and records review, Mr. Toton provided a tour of the facility.

The tour began at Building 1, where a small assembly line, cutting line, and cold cleaner were observed. This equipment was previously located in Building 3 prior to demolition. Instructions for the cold cleaner were posted in a conspicuous location. The assembly line and cutting line do not appear to generate any emissions. The cutting machine that makes pinion gears was observed. The machine was not in operation at the time of inspection. All cuttings are contained within in the machine and emissions are contained to the general in-plant environment.

The tour continued in Building 1 where a small paint booth was observed. The paint booth was not in operation at the time of inspection. Filters were in place. A paint use log was hung outside the door for record keeping of paint quantities used.

The tour continued at the expansion portion of Building 1. The expansion of Building 1 was under construction with steel framing up and some of the expanded office floors under construction. According to Mr. Toton, the expansion will include a "flexible manufacturing" area that change depending on client needs. According to Mr. Toton, McLaren believes the flexible manufacturing lines will not be subject to air quality regulations and any emissions from machine cutting, etc will be released to the general in-plant environment.

The facility tour continued to Building 2, where two electrical test cells were observed, in addition to a transmission parts assembly area, test vehicle storage area, and two cold cleaners. The cold cleaners' lids were closed. Signs were posted on the wall in front of each cold cleaner reminding employees to close the lid when not in use. The electrical test cells in building 2 are not subject to air quality regulations.

Following observation of Building 2, the test cells were observed. Conventional engine test cells are set up similarly in every test cell room. The engine to be tested is secured in a cradle in the middle of the room. Extending out the back of the engine is a cylindrical driveshaft which connects to the dynamometer. The dynamometer measures engine characteristics and transmits the data to monitors outside the rooms. An exhaust pipe extends from the side of each engine and trails near the floor to the back of the room into a vertical muffler and then through the ceiling to the stack on the roof. The catalyst (s), if present, are located in shells between the engine and the muffler. An operator reads the gas meter each morning to determine the gasoline usage for the day. Backpressure, A/F ratio, and inlet to bed temperature readings are collected during testing for reporting purposes.

Several of the test cells have been converted to electrical testing. At the time of the inspection, test cells that had been converted to perform electrical testing include test cells 1, 2, 3, 6, 11, 12, and 16. Test cell 10 was observed with catalytic converters in place (modification as permitted through 67-05B).

APPLICABLE RULES/PERMIT CONDITIONS

Renewable Operating Permit No. MI-ROP-A8217-2012

The ROP was renewed with an effective date of April 18, 2012. The General Condition (GC) and Special Condition (SC) are listed as appropriate. For brevity, permit conditions and the language of federal and state rules have been paraphrased. Records provided are included in the facility file.

GC 11 – IN COMPLIANCE. Opacity limited to a six-minute average of 20 percent (%), except for one six-minute average or not more than 27% opacity. Visible emissions were zero from all stacks during the inspection.

EU-Paint Area

SC II. 1 IN COMPLIANCE. Spray coating usage limited to 55 gallons per 12-month rolling time period. Records provided indicate that the paint usage is significantly less than 55 gallons per 12-month rolling time period. The facility typically uses less than one gallon per month. The highest 12-month rolling paint usage occurred in March 2014 at 9.8 gallons.

SC VI. 1 IN COMPLIANCE. Shall maintain monthly and annual coating usage records. February 2013 through August 2015 monthly records were submitted.

EU-TestCell10 as listed in MI-ROP-A8217-2012 has been updated by PTI 67-05B as evaluated below.

FG-ColdCleaners

The ROP table lists seven cold cleaners. The condition is written to cover any cold cleaner that is grandfathered or exempt. During the inspection, seven cold cleaners were in operation. The requirements below apply to each cold cleaner individually.

SC II MATERIAL LIMITS

1. IN COMPLIANCE. Based on a review of safety data sheet (SDS) submitted, solvents do not contain prohibited chemicals listed in this condition above 5 percent.

SC IV DESIGN/EQUIPMENT RESTRICTIONS

1,2,3, 4, 5 IN COMPLIANCE. (1) Each cold cleaner must either have an air/vapor interface of 10 square feet or less or the cold cleaner must vent to the in-plant environment; (2) be equipped with a device for draining cleaned parts; (3) be equipped with a cover and cover is closed when not in use; (4) the cover mechanically assisted if the solvent's Reid vapor pressure exceeds 0.3 pounds per square inch absolute (psia) or the solvent is heated or the solvent is agitated; (5) for new cold cleaners; special conditions that apply to Reid vapor pressure greater than 0.6 psia.

Observations indicate that each cold cleaner vents to the in-plant environment and is equipped with a cover. The covers were closed at the time of the inspection. Parts are left in the tanks to drain. According to McLaren, the solvent is neither heated nor agitated during cleaning. The MSDS provided indicates the vapor pressure is 2.1 mmHg (0.04 psia).

SC VI MONITORING/RECORDKEEPING

1,2,3,& 4 IN COMPLIANCE. (1) if solvent is heated, solvent temperature shall be monitored; (2) Recordkeeping on the make/model, size, description, date of installation, air/vapor surface area, type of solvent for each cold cleaner; (3) written procedures posted; (4) waste solvent stored in closed containers unless a safety hazard.

The records on the cold cleaners were submitted on December 26, 2007 and have not changed. See facility file. Written procedures were posted. Waste solvent was not observed during the inspection.

FG-TestCells

SC VIII IN COMPLIANCE. STACK/VENT RESTRICTIONS. Stacks appear to be in compliance based on visual observation from ground level and reported values.

FG-TestCellsCC

SC I EMISSION LIMITS

1&3 UNABLE TO DETERMINE. CO and VOC emissions from FG-TestCellsCC shall not exceed 0.59 pounds CO per gallon of gasoline combusted (SC 1) nor 0.008 pounds VOC per gallon of gasoline combusted (SC 3). The monitoring method for the pounds per gallon limit is a stack test through General Condition No. 13, a condition indicating the Department may require a stack test through R 336.2001 and R 336.12003. The AQD has previously requested stack testing (during 2007), but this requirement has been placed on hold as the facility is not operating under normal representative conditions. SC V states that CO and 1,3-butadiene testing is required no later than 1 year prior to permit renewal. However, this condition identifies EU-TestCell10 and is likely in error as FG-TestCellsCC do not have a 1,3-butadiene emission limit.

2&4 IN COMPLIANCE. CO and VOC emissions from FG-TestCellsCC shall not exceed 133.4 tons per year (SC 2) nor 1.8 tons per year (SC 4), respectively; the tons per year limit is to be evaluated on a 12-month rolling time period. Based on emission records submitted, the highest 12-month rolling emissions for CO and VOCs were 2.65 tons and 0.04 tons respectively, and occurred in October 2013.

SC II MATERIAL LIMITS

1&2 IN COMPLIANCE. Fuel usage shall not exceed 2,000 gallons per day (SC 1) nor 450,000 gallons per 12-month rolling time period (SC 2). Maximum daily fuel usage for all controlled cells was 750 gallons and occurred on May 11, 2015. The highest 12-month rolling fuel usage for FG-TestCellsCC since October 2013 was 8,989 gallons.

SC IV DESIGN/EQUIPMENT

1. IN COMPLIANCE. Shall not operate any test cell unless each test cell has a catalytic converter installed, maintained, and operating in a satisfactory manner. Catalytic converters are maintained and operating properly.

SC VI MONITORING/RECORDKEEPING

1. IN COMPLIANCE. Shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the inlet temperature and catalyst bed temperature for each catalytic converter during an engine test. Records provided indicate that inlet temperature and catalyst bed temperature are recorded during each engine test.

2. IN COMPLIANCE. Shall use catalytic converters to assure compliance with the carbon monoxide limit. An excursion for non-compliance shall be 2 consecutive 1-hour block average catalyst bed temperature readings less than 230°C. Records provided indicate that the catalyst bed temperature has been greater than 230°C (446°F).

3, 4, & 5. IN COMPLIANCE. Shall keep daily, monthly and previous 12-month rolling records for CO, VOC, and 12-month fuel usage. Daily fuel usage records are available. Monthly and 12-month rolling CO, VOC, and fuel usage were submitted.

6. IN COMPLIANCE. Shall keep, in a satisfactory manner, continuous records of the inlet temperature and catalyst bed temperature. Records were provided for the inlet and catalyst bed temperature when in operations.

SC VIII STACK/VENT RESTRICTIONS

1-9 IN COMPLIANCE. Stacks were determined to be in compliance.

Permit to Install No. 67-05B – EUTESTCELL10

Permit to Install No. 67-05B was issued on August 19, 2013 for the modification (installation of catalytic converter and use of alternative fuels [compressed natural gas, liquid petroleum gas, etc.]) at EU-TestCell10. According to Mr. Toton, the modification of EU-TESTCELL10 occurred in October 2014. PTI 67-05B conditions were evaluated from October 2014 going forward.

SC I. EMISSION LIMITS

1. **IN COMPLIANCE.** CO – 709.2 pounds per day (lb/day). Daily fuel usage records were submitted. The highest daily fuel usage since October 2014 occurred on March 14, 2015 at 230 gallons. Based on the worst case emission factor (EF) for CO (EF = 0.394 lbs. CO/gal), the daily emissions for that day was 90.6 lbs CO/day.
2. **IN COMPLIANCE.** CO – 16 tons per year on a 12-month rolling time period determined at the end of each calendar month. The highest CO 12-month rolling emissions since October 2014 was 12 tons/year.
3. **IN COMPLIANCE.** 1,3-butadiene – 28.9 lbs/year on a 12-month rolling time period determined at the end of each calendar month. The highest 1,3-butadiene 12-month rolling emissions since October 2014 was 13.1 lbs/year.

SC II MATERIAL LIMITS

1. **IN COMPLIANCE.** Shall only burn unleaded gasoline, diesel, kerosene, CNG, and LPG. According to Mr. Toton, test cell 10 has not fired any fuel except gasoline.
2. **IN COMPLIANCE.** Fuel usage shall not exceed 1,800 gallons per calendar day. The highest fuel usage since October 2014 occurred on November 5, 2014 at 84 gallons.
3. **IN COMPLIANCE.** Fuel usage shall not exceed 77,000 gallons per 12-month rolling time period as determined at the end of each calendar month. The highest 12-month rolling fuel usage since October 2014 was 6,201 gallons.

SC V TESTING

1. **NOT IN COMPLIANCE.** Verification of CO emission rates with 180 days after commencement of operation. According to Mr. Toton, EU-TESTCELL10 was modified in October 2014 and has not performed the required stack testing. According to Mr. Andrew Bosscher, Development Engineer, the facility has contacted CRA to conduct stack testing as required under PTI 67-05B.

SC VI MONITORING

1 & 2a through f. **IN COMPLIANCE.** Shall maintain record of days of operation, total combined gallons, CNG and LPG use calculations, monthly and 12-month rolling emission records for CO, and monthly and 12-month rolling emission records for 1,3-butadiene. Monthly and 12-month rolling records are maintained for CO and 1,3-butadiene, and daily, monthly, and 12-month rolling fuel usage records are maintained. At this time, the facility has not used any other fuel in except gasoline in Test Cell 10 and maintains the appropriate records.

3a & b. **IN COMPLIANCE.** Shall maintain daily fuel used calculations based upon the total combined gallons used divided by the number of days operated. Fuel use records are maintained.

SC VII REPORTING

1. **NOT IN COMPLIANCE.** Shall notify the AQD within 30 days after completion of modification.

SC VIII STACK RESTRICTIONS

IN COMPLIANCE. STACK/VENT RESTRICTIONS. The stack for EU-TestCell10 appears to be in compliance based on visual observation from ground level and reported value.

R 336.1301

This rule covers the density of emissions and is applicable to all sources.

R 336.1301(1)(a) – **IN COMPLIANCE.** Visible emissions limited to a six-minute average of 20% opacity, except for one six-minute average per hour of not more than 27%. Opacity was zero at the time of inspection.

PERMIT TO INSTALL EXEMPT EQUIPMENT

Pinion Gear Cutting Machine

The pinion gear cutting machine and associated equipment are exempt from PTI requirements under the following Rule.

R336.1285(l)(vi)(B): “Equipment for carving, cutting, routing, turning, drilling, machining, etc. which has emissions that are released only into the general in-plant environment.”

The small assembling line and electrical testing does not appear to generate any air emissions and would not require an AQD permit.

Compliance Assurance Monitoring (40 CFR Part 64)

Per 40 CFR Part 64.5(b) the facility has submitted a CAM plan with the ROP renewal for ROP No. MI-ROP-A8217-2012. The ROP has incorporated the CAM requirements as appropriate.

40 CFR 63, Subpart CCCCCC—National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

Subpart CCCCCC was not evaluated during the inspection. This regulation will be incorporated in the ROP upon renewal.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:


Not applicable.

MAERS REPORT REVIEW:

The facility is required to report to the Michigan Air Emission Reporting System (MAERS). Facility submitted MAERS for reporting year 2014 in a timely manner. No issues were identified with the 2014 MAERS reporting (See MACES report CA_A821728871 for the 2014 MAERS review report).

FINAL COMPLIANCE DETERMINATION:

At this time, this facility appears to be in noncompliance with PTI 67-05B, EU-TESTCELL10, SC V.1 (failure to verify emission rates with 180 days) and SC VII. 1 (failure to notify of completion of modification). A violation notice will be issued.

NAME  DATE 10/26/15 SUPERVISOR JK