DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

N772738958

FACILITY: NISSAN TECH CENTER IN AMERICA		**SRN / ID:** N7727
LOCATION: 39001 SUNRISE DR, FARMINGTN HLS		**DISTRICT:** Southeast Michigan
CITY: FARMINGTN HLS		**COUNTY:** OAKLAND
CONTACT: Mario Phillips , Corporate Service Manager-Facilities Operations		**ACTIVITY DATE:** 03/17/2017
STAFF: Sebastian Kallumkal	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** Minor
SUBJECT: Onsite Inspection		
RESOLVED COMPLAINTS:		

On Friday, March 17, 2017, Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) Staff Sebastian Kallumkal conducted an unannounced self-initiated inspection at Nissan Technical Center located 39001 Sunrise Drive, Farmington Hills, Michigan. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) Rules; and Permit-To-Install (PTI) Number 343-06.

I arrived at the facility at about 1:15 PM. I met Mr. Mario Phillips, Corporate Service Manager, Midwest Region, Facilities Operations. I introduced myself, provided identifications, and stated the purpose of my inspection.

During the pre-inspection meeting, we discussed the facilities operations. PTI No. 343-06 includes limits for NOx and CO and was approved in December 2006 for the installation of two dynamometer engine test cells. However, at that time, the facility only installed one dyno test cell. The PTI does not specify the capacity of the engines to be tested. The facility is only testing gasoline engines and no diesel engines. He told me that later they replaced the existing dyno with a larger dyno to test larger engines.

The Nissan Technical Center occupies several buildings. The site is composed of three groups: Engineering, Styling, and Prototype/Testing. Any air emissions would likely come from the Prototype/Testing Group.

After the meeting, he accompanied for an inspection of the facility. AQD Staff inspected the following: environmental chamber (corrosion testing), garage, road simulator, durability testing, supplier validation testing, mileage validation testing, emissions testing, engine dynamometer testing, chassis dynamometer testing, cold cleaners, emergency generator and paint spray booth, etc. For some of the testing, an assembled vehicle is randomly selected and components are individually tested.

The test cell includes a double ended dyno which can test two engines at the same time. The room for other dyno is used for storage. The facility has three chassis dynos: one 800 HP (400 HP per axle, and two 125 HP.

The facility has two welding stations which are vented into the general in-plant area. This process is exempt from permit to install requirements pursuant to Rule 285(2)(i).

Facility has a permit, PTI No. 343-06 for 2 dynamometer engine test cells. Only one has been installed so far. NOx and CO limits are 89 tons each, per year. The uncontrolled emissions were calculated based on fuel usage and emission factors in the PTI and were 4.5 TPY for CO and 2.5 TPY for NOx based on a 12 - month period as of December, 2015 and 2016. The actual controlled emissions would be lower since a catalytic converter is used for most of the engine test. The dynamometer is a double ended unit, but only one engine can be tested at a time. Typically, engine "mapping" tests is conducted where the engines are run from idle to full throttle. Tests run for about 2 hours. Engine durability testing is not done in the engine dynamometer test cell. Fuel usage is metered. There are five storage tanks (2500-gallon capacity) for storing fuel: diesel, regular, premium, indolene, and ethanol. Staff verified that facility keeps fuel usage and emissions records. The fuel records show that the facility's fuel usages are below the permit limits. Records are attached for review.

Three chassis dynamometers are installed. Assembled vehicle is tested here. AQD considers the chassis dynamometer as an exempt emission unit, since an assembled vehicle is considered a mobile source. Federal Test Procedure 75 is the typical test conducted at the chassis dynamometer. The vehicle

is typically run at an equivalent distance of about 10 miles. One of the chassis dynamometer test cells has 2 dynamometers, one for each axle.

The paint spray booth is exempt from permit to install requirements pursuant to Rule 287(2)(c). The coating usage is low. Typically, it may be used whenever a vehicle is being prepared for a car show. Typically, about 4-5 cars per year. The facility has about 6 solvent degreasers using mineral spirits, no halogenated solvents, serviced by Safely Kleen. The lid was closed at the time of the inspection. Later, I emailed him the MDEQ procedures to be posted near each part washer.

In the environmental chamber, an assembled vehicle is tested at different climatic conditions, from 10° F to 100° F.

Heating to the facility is supplied by 4 furnaces and hot water heaters with a capacity of about 1 mmBTU/hr. The facility has an existing Caterpillar, diesel fueled (compression ignition), 225 KW, emergency generator, installed in 1990. This is an existing emergency generator located at an area source of Hazardous Air Pollutants subject to 40 CFR 63, Subpart ZZZZ- National Emissions Standards for Hazardous Air Pollutants (NESHAP). The facility is keeping records of the hours of operations. AQD does not have regulator authority to enforce this NESHAP at area sources. Compliance was not determined.

In the fuel tank vapor canister test, butane is used instead of gasoline. A vapor canister is an emission control device inside the gasoline tank where gasoline vapors are captured during fuel fill up and idling. Vapors are later released inside the gasoline tank. Typically, 4 to 5 canisters are tested daily. Emissions are small. The facility uses about twelve 25 lb tanks each year for the canister testing.

Conclusion: Based on the facility inspection and records review, the facility appears to be in compliance with applicable air quality regulations.

NAME Debastiany Kallimkal DATE 3/27/17 SUPERVISOR Joyce Zhu