

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

N823224422

FACILITY: AW TECHNICAL CENTER USA INC (AW-TC)		SRN / ID: N8232
LOCATION: ANN ARBOR TECHNOLOGY PARK, ANN ARBOR		DISTRICT: Jackson
CITY: ANN ARBOR		COUNTY: WASHTENAW
CONTACT: Joseph Hardwick , Quality Administrator		ACTIVITY DATE: 02/27/2014
STAFF: Glen Erickson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled inspection prompted by modeling questions connected to nearby Toyota expansion. AWTC has an opt-out permit no. 115-09A.		
RESOLVED COMPLAINTS:		

Scheduled inspection with Joe Hardwick, Quality Administrator, 734-663-6578. Originally attempted to meet with Hardwick earlier in the morning, only to find out he was working today at the company's Plymouth facility. The secretary left him a message and I left.

Hardwick called me about 40 min. later and we arranged to meet at the AWTC, Ann Arbor facility later that day.

This inspection was prompted by the current permit review of a large modification/expansion to the nearby Toyota engine testing facility. During the Toyota permit review Tom Julien, AQD Modeling Section called to inquire about estimated stack emission rates and stack flow rates at the nearby AWTC engine/transmission testing facility.

Julien indicated that his screening of MAERS data from AWTC showed significant potential maximum CO emission rates from at least 1 test cell, notably Cell No. 1. AWTC had just submitted their MAERS information for reporting year 2013. The company operates 5 test cells with dynamometers for analyzing their transmissions in an uncontrolled mode, and 2 chassis dynamometers testing road legal vehicles with production catalysts.

The company apportions 90% of their fuel usage equally across the 5 test cells, and 10% across the 2 chassis dynamometers. The stack configurations for the 5 test cells are identical, however, in the 2013 submittal Hardwick somehow included 7975 cfm for the exhaust stack for Test Cell 1, while 777 cfm for each of the other 4 test cells. This was one of the potential modeling inputs that was causing significant contributions of CO to the predicted impacts of Toyota's proposed modification/expansion of their CO emissions.

Hardwick confirmed that the exhaust stack configurations and emission concentrations are identical for all 5 engine Test Cells, and that Cell 1 should also show 777 cfm from the stack.

PTI No. 115-09A is an ROP opt-out permit limiting CO emissions to 2.185 lb./gal. gasoline, and less than 99.9 tpy CO from the facility. In addition, the total combined gasoline usage for all permit exempt dynamometer test cells shall not exceed 88,785 per 12-month rolling time period. The emission factor of 2.185 lbs. CO/gal. gasoline was derived from the 2010 stack test performed at the facility. The stack testing measuring CO Emission Rate was conducted for 2 separate testing regimes, a Continuous High Speed Durability scenario, and a Bench Test for Acceleration and Deceleration scenario. The facility normally conducts testing for each of these testing scenarios approximately equally so an average emission rate was calculated for the 2 testing regimes. The Continuous High Speed scenario showed 0.61 lbs. CO/ gal. gasoline; while the Acceleration/Deceleration scenario showed 3.76 lbs. CO/gal. gasoline, resulting in an average emission factor of 2.185 lbs. CO/gal. gasoline.

We toured the testing cells. No tests were currently being performed. Cell 1 is currently being leased by Toyota for their own testing. It would appear to directly relate to Toyota's modification/expansion.

Facility operates 1 small paint booth with very minimal coating usage, well below the 200 gal. limit for permit exemption Rule 287)c). They do not have any emergency generators on-site.

Gasoline usages for the last 4 years shows: 38,825 gals. (2010); 51,110 gals. (2011); 35, 688 gals. (2012) ; and 58,932 gals. (2013). All are well below the permit limit of 88,785 gals.

For 2013 CO emissions from consuming 58,932 gals. gasoline, with 90 % usage uncontrolled through Cells 1-5 @ 2.185 lbs. CO/ gal. gasoline; and 10 % usage through the 2 controlled cells @ 10% of 2.185 lbs. CO./gal. gasoline:

$(58,923 \text{ gals.}) \times (.9) = 53,038.8 \text{ gals.}$  consumed through the 5 uncontrolled cells, Cell 1-5. The emission rate for the uncontrolled cells is 2.185 lbs. CO/ gal. gasoline.

$(53,038.8 \text{ gals.}) \times (2.185 \text{ lb.s CO/gal}) = (115,890 \text{ lbs.}) \times (1 \text{ ton}/2000\text{lb}) = 57.94 \text{ tons CO}$  from uncontrolled Cells 1-5.

$(5,893.2 \text{ gals.}) \{\text{from 2 chassis dynos}\} \times (.1 \times 2.185) = (1,288 \text{ lbs. CO}) \times (1 \text{ ton}/2000\text{lb}) = 0.64 \text{ tons CO}$  from controlled chassis dynos.

Total facility CO emissions for 2013 = 58.58 tons. CO.; which is well under permit limit of 99.9 tons CO.

Back at the office, I found a problem with the company-calculated CO emissions input into MAERS. Hardwick was somehow not listing the proper gal. of gasoline for each cell based upon his records of 58,932 gals consumed in 2013. Also, he was using the AQD default CO emission factor of 3.94 lbs. CO/gal. gasoline, instead of the stack test derived 2.185 lbs. CO/gal. established at his facility.

After discussing this with Hardwick I entered the proper throughputs for each cell based on the facility-wide gasoline consumption and the proper emission factor.

Company is in full compliance with all permit conditions. MAERS is also reflecting the proper apportioning of fuel usage through the cells and the use of the proper emission factor.

NAME GUAN ERICKSON

DATE 3-5-14

SUPERVISOR 