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

NEGE245074

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|--|-------------------------------|----------------------------------|
| FACILITY: Ricardo Inc. | | SRN / ID: N6962 |
| LOCATION: 40000 Ricardo Drive, VAN BUREN TWP | | DISTRICT: Detroit |
| CITY: VAN BUREN TWP | | COUNTY: WAYNE |
| CONTACT: Theodore Byrne , Quality Liason | | ACTIVITY DATE: 02/01/2018 |
| STAFF: Jill Zimmerman | COMPLIANCE STATUS: Compliance | SOURCE CLASS: SM OPT OUT |
| SUBJECT: Target Inspection | | |
| RESOLVED COMPLAINTS: | | |

DATE OF INSPECTION

February 1, 2018

TIME OF INSPECTION

1:45 pm

INSPECTED BY

PERSONNEL PRESENT

Jill Żimmerman Ted Byrne, Quality Environmental H&S Manager

Bob Neighbors

Justin Grone, Technician Engineer

FACILITY PHONE NUMBER : 734-394-3712 ted.byrne@ricardo.com

Justin.grone@ricardo.com

FACILITY BACKGROUND

Ricardo operates twelve engine test cells and one cold start test cell. The engines being tested in these cells are capable of operating on gasoline, diesel or compressed natural gas. The facility operates two shifts per day, five days per week based on a need from the customers.

PERSONAL PROTECTION EQUIPMENT

The personal protection equipment required to inspect this facility is safety glasses and steel toe shoes.

COMPLAINT/COMPLIANCE HISTORY

No complaints have been received regarding this facility.

OUTSTANDING VNs

No VNs have been issued since at least the last time that this facility was inspected.

PROCESS EQUIPMENT AND CONTROLS

Each engine is equipped with a catalytic convertor to control emissions. Each test cell operates one of the engines to be tested on a dynamometer. The test is controlled in the control room by the technician based on the test protocol. Typically, it takes about a week to install the engine onto the dynamometer. Testing time for a particular engine varies based on the customers' needs.

INSPECTION NARRATIVE

l arrived at the facility on Thursday February 1, 2018 at 1:45 pm and met with Mr. Ted Byrne. Together we walked to the lab portion of the facility, where the engine testing occurs. During the inspection, engines were being tested in test cells 9 and 11.

Fuel usage records are kept and recorded weekly, with the data being entered into a spreadsheet to track fuel usage as well as emissions. These calculations are used to for the annual emissions reporting requirements. These spreadsheets were reviewed during the

onsite inspection and appear to contain all necessary information. Daily shift logs are used to track the fuel usage through a fuel meter and the hours that the engines operated. This information is recorded into the spreadsheet for the monthly totals.

Each gasoline or diesel fuel delivery contains a fuel sheet which lists the lead content in the gasoline and the sulfur content in the diesel fuels. There are four underground storage tanks onsite which store diesel or gasoline.

After we discussed the process of the facility Mr. Byrnes and I walked through the facility to observe the testing cells. We met with Mr. Grone to discuss the records. Mr. Grone shared a copy of these records with me. Next, we met with Mr. Neighbors, who thoroughly explained the operation of a testing cell in a cell that was not currently operating. During the onsite inspection, test cells 9 and 11 were operating.

The facility has four cold cleaner units onsite. None of these units are heated. Each of these units is maintained by Safety Kleen. During the onsite inspection, one unit was observed and was closed.

APPLICABLE RULES/PERMIT CONDITIONS

The facility recently voided the Title V permit MI-ROP-N6962-2010. The facility obtained an opt-out permit 370-08C on June 23, 2017. This permit also contains the conditions from PTI 370-08B, which allowed the facility to use compressed natural gas (CNG) as a fuel choice. However, there currently is not much demand for testing engines with CNG, so the facility has not yet performed emission testing on engines using CNG.

The special conditions of 370-08C were evaluated below:

FG-TESTCELLS – This flexible group contains twelve compression and spark-ignited engine dynamometer test cells and one temporary cold start module. The emission units included in this group are EU-TESTCELL-01, EU-TESTCELL-02, EU-TESTCELL-03, EU-TESTCELL-04, EU-TESTCELL-05A & B, EU-TESTCELL-06, EU-TESTCELL-07, EU-TESTCELL-08, EU-TESTCELL-09, EU-TESTCELL-10, EUTESTCELL-11 and EU-TCS.

- Emission Limits
 - 1. NO_x Compliance The facility reported emitting 4.4184 tons for a 12-month month rolling time period for December 2017 and 0.6133 tons for the month of December 2017, which is less than the permit limit of 34.5 TPY.
 - 2. NO_x Undetermined CNG has not been tested at this time due to workload.
 - 3. CO Compliance The facility reported emitting 10.1217 tons for a 12-month month rolling time period for December 2017 and 1.4060 tons for the month of December 2017, which is less than the permit limit of 74.6 TPY.
 - 4. VOC Compliance The facility reported emitting 2.3645 tons for a 12-month month rolling time period for December 2017 and 0.3274 tons for the month of December 2017, which is less than the permit limit of 21.7 TPY.
 - 5. PM₁₀ Compliance The facility reported emitting 0.1394 tons for a 12-month month rolling time period for December 2017 and 0.0177 tons for the month of December 2017, which is less than the permit limit of 7.48 TPY.
 - 6. SO₂– Compliance The facility reported emitting 0.1226 tons for a 12-month month rolling time period for December 2017 and 0.0155 tons for the month of December 2017, which is less than the permit limit of 6.94 TPY.

- 7. Formaldehyde Compliance The facility reported emitting 0.0024 tons for a 12-month month rolling time period for December 2017 and 0.0 tons for the month of December 2017, which is less than the permit limit of 0.567 TPY.
- 8. Formaldehyde Undetermined The facility reported emitting 0.0004 pph for a 12-month month rolling time period for December 2017 and 0.0 pph for the month of December 2017, which is less than the permit limit of 0.032 pph.

II. Material Limits

- 1. Fuel: Compressed Natural Gas Undetermined. During 2017, the facility used 93,200 cubic feet, with 0.0 cubic feet used in December 217. The hourly usage rate was not evaluated during the onsite inspection.
- 2. Compression ignited Compliance The facility reported using 11,101 gallons of diesel fuel and 4,498 gallons of jet fuel during 2017, for a total of 15,599 gallons during 2017 through MAERS. Based on the records collected during the onsite inspection, the 12-month rolling volume for diesel fuel in December 2017 was 1,996 gallons and the 12-month rolling volume for jet fuel was 7,745 gallons for a total of 9,741 gallons. These values do not match the values reported in MAERS, however, both are less than the permit limit of 160,000 gallons per year. During the next onsite inspection, more information will be collected to clarify these differences.
- 3. Fuel: Spark-ignited Compliance The facility reported using 4,630 gallons of gasoline fuel and 5,987 gallons of liquid propane during 2017, for a total of 10,617 gallons in the 2017 MAERS. Based on the records collected during the onsite inspection, the 12-month rolling volume for gasoline fuel in December 2017 was 2,274 gallons and the 12-month rolling volume for liquid propane was 22,781 gallons for a total of 25,055 gallons. These values do not match the values reported in MAERS, however, both are less than the permit limit of 185,000 gallons per year. During the next onsite inspection, more information will be collected to clarify these differences.
- Process / Operational Restrictions NA During tests run on EU-TCS, the facility is required to operate with a properly functioning catalytic converter. During the onsite inspection, I did not observe a test being run in this testing cell.
- IV. Design / Equipment Parameters Not evaluated.
- V. Testing / Sampling A stack test was performed on August 19, 2014 and August 20, 2014 to verify that the emission rates of CO and NOx. The results of this test were determined to be acceptable. At this time, the facility had not used CNG for any testing. The facility will be due to repeat the stack test by August 19, 2019. At this point, the facility should also test using CNG.
- Monitoring / Recordkeeping Compliance. The facility maintains binders with each testing station to record all necessary records. These binders were reviewed during the onsite inspection and appear to be capturing all the required data. The facility also uses a company database which stores all emission calculations.
- VII. Reporting Undetermined. CNG has not been used consistently at the facility. No jobs using CNG have been requested as of the time of the onsite inspection.
- VIII. Stack / Vent Restrictions Compliance No changes have been made to the stacks since the stacks were installed.
- IX. Other Requirements NA No change in land use has occurred for this property.

FGFACILITY

Emission Limits – Compliance. The engine testing emitted less than 11 tons of CO during 2017. No other processes are occurring at this location. It can be assumed

that with the additional basic office heating and cooling, the CO emissions would not exceed 89.9 tpy.

- II. Material Limits NA
- III. Process/Operational Restrictions NA
- IV. Design/Equipment Parameters NA
- V. Testing/Sampling NA
- VI. Monitoring/Recordkeeping Compliance. The facility maintains the required records including CO emissions (both monthly and 12-month rolling). A copy of these records for December 2017 is attached to this report.
- VII. Reporting NA
- VIII. Stack/Vent Restrictions NA
- IX. Other Requirements NA

This facility is a true minor source for hazardous air pollutants (HAPs), which was determined during the permitting process for permit 370-08B. Therefore this source is not subject to MACT PPPPP.

The cold cleaner units use a naphtha-based solvent, which meets the Rule 707(2) requirements to have a Reid vapor pressure of less than 0.6 psia. These units are exempt from Rule 201 under Rule 281 (h). These units are not subject to MACT T.

MAERS REPORT REVIEW

This report was received on March 14, 2018. All reported emissions were reviewed and appear to have been reported accurately. The review was completed on May 22, 2018.

FINAL COMPLIANCE DETERMINATION

Ricardo appears to be operating in compliance with all state and federal requirements, as well as all permit conditions.