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

B904351769

| | | |
|---|---|---|
| **FACILITY:** CITGO PETROLEUM CORP | | **SRN / ID:** B9043 |
| **LOCATION:** 2233 S 3RD ST, NILES | | **DISTRICT:** Kalamazoo |
| **CITY:** NILES | | **COUNTY:** BERRIEN |
| **CONTACT:** Rich Green , Terminal Manager | | **ACTIVITY DATE:** 12/19/2019 |
| **STAFF:** Matthew Deskins | **COMPLIANCE STATUS:** Compliance | **SOURCE CLASS:** SM OPT OUT |
| **SUBJECT:** Unannounced Scheduled Inspection | | |
| **RESOLVED COMPLAINTS:** | | |

**On December 19, 2019 AQD staff (Matt Deskins) went to conduct an unannounced scheduled inspection of the Citgo Petroleum (B9043) facility located in Niles, Berrien County. Citgo Petroleum is a synthetic minor (Opt-Out) source and their current operations are covered under PTI No. 42-05B. The facility is also subject to 40 CFR Part 63 Subpart BBBBBB (NESHAP for Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities at area sources) which took effect in 2008. During a previous inspection, staff made a compliance determination to this regulation but later learned that the AQD is not delegated to enforce this regulation by the EPA. The purpose of the inspection was to determine the facilities compliance with PTI No. 42-05B and any other applicable state and/or federal air regulations that the AQD is delegated to enforce. Staff will not be making a compliance determination to the NESHAP Subpart BBBBBB. Staff departed for the facility at approximately 10:45 a.m.**

**Staff arrived at the facility at approximately 12:40 p.m. after travel time and having lunch. The facility is entirely fenced and has a gated entry where visitors have to use a call box to introduce themselves prior to entering. Staff did this and was allowed to proceed to the office area once the gate opened. Upon entering the office area, staff met up with Rich Green (Terminal Manager). Staff had met with Rich on previous inspections and staff gave him a business card and explained what the inspection would again entail. Staff mentioned that they would need to see the records required to be kept by the permit, view loading operations, and then look at their control device (vapor combustion unit which is an enclosed flare). Rich said that was fine but mentioned that should there be any issue with their records, he would have to contact their consultant who puts them together. Staff said that would be fine and that we would wait and see because historically their records and recordkeeping haven't been an issue. Prior to reviewing records, staff asked Rich some general questions about facility operations. The following is a short summary of those discussions.**

**According to Rich, the terminal only employs two full-time Citgo employees, himself and Brian (last name?). He said that they are at the terminal Monday through Friday from 8:00 a.m. until 4:30 p.m. and that they both trade off duties of being on call at night. He said that the terminals loadout rack is open 365 days 24/7. Staff then asked him to look over the emission units of the PTI to verify that the information is still accurate. After the previous inspection in 2016 they ended up having to submit a PTI to modify/update the accuracy of the emission units. Rich looked over the list and verified that they were all the same. He then mentioned that Tank 11 is currently out of service though and will be for the foreseeable future. He said that the additive that was stored in it was for a certain customer who now just purchases Citgo's additive. He also mentioned that Tank 2 is currently storing Sub-Octane Gas where it had been Regular Gas. Lastly, he noted that although the load rack has 12 loading arms, only 11 are used.**

**NOTE: All tanks at the facility were either installed under a permit or under a permit exemption. The most recent tanks that the facility added were tank #14 which was added in 2005 and tank #19 in 2008. They are both 8,000 gallons and #14 stores a lubricity additive for diesel fuel and #19 stores a BP gasoline additive. Back in 2012, Staff had asked for a copy of their MSDS sheets for both products to see if they met the requirements of the AQD permit exemption Rule 284(i). Rule 284(i)) allows for "Storage or transfer operations of volatile organic compounds or non-carcinogenic liquids in a vessel that has a capacity of not more than 40,000 gallons where the contents have a true vapor pressure of not more than 1.5 psia at the actual storage conditions". After researching, staff was able to determine that both tanks and their content met the exemption. The MSDS sheets indicated that both products are VOCs and listed the vapor pressure of both in mmHg. When converted to psia they are both well under 1.5 psia exemption requirement. Of course all AQD exemptions require that the increase in actual emissions cannot exceed the significance levels as defined in Rule 336.1119 which wasn't an issue in this case.**

**Staff then began a records review and the following lists the special conditions of PTI No. 42-05B and the facilities compliance status with them. Staff deleted any conditions that were listed as N/A.**

**NOTE: Staff again put what specific products are stored in tanks 1 through 5 under their respective emission unit IDs. Rich mentioned that any tanks storing Sub-Octane fuels can't be sold as is and are mixed with Ethanol to raise their Octane rating. Example, Sub-Octane Regular is 85 Octane but when mixed with Ethanol makes it 87. Sub-Octane Premium is 91 Octane but when mixed with Ethanol makes it 93.**

## SPECIAL CONDITIONS OF PTI NO. 42-05B

## EMISSION UNIT SUMMARY TABLE

**The descriptions provided below are for informational purposes and do not constitute enforceable conditions.**

| Emission Unit ID | Emission Unit Description (Process Equipment & Control Devices) | Flexible Group ID |
|---|---|---|
| EUTANK1<br>Premium Gas | 1,008,000 gallon internal floating roof tank for storing gasoline or distillate fuel oil | FGFUELTANKS |
| EUTANK2<br>Sub-Octane Gas | 2,310,000 gallon internal floating roof tank for storing gasoline or distillate fuel oil | FGFUELTANKS |
| EUTANK3<br>U.L.S. Diesel | 1,470,000 gallon internal floating roof tank for storing gasoline or distillate fuel oil | FGFUELTANKS |
| EUTANK4<br>U.L.S. Diesel | 1,470,000 gallon internal floating roof tank for storing gasoline or distillate fuel oil | FGFUELTANKS |
| EUTANK5<br>Sub-Octane Gas | 5,040,000 gallon internal floating roof tank for storing gasoline or distillate fuel oil | FGFUELTANKS |
| EUTANK10 | 10,584 gallon horizontal tank for storing gasoline additive | FGFACILITY |
| EUTANK11 | 6,006 gallon horizontal tank for storing gasoline additive | FGFACILITY |
| EUTANK12 | 1,000 gallon horizontal tank for storing premium diesel fuel additive | FGFACILITY |
| EUTANK13 | 1,000 gallon horizontal tank for storing premium diesel fuel additive | FGFACILITY |
| EUTANK14 | 8,000 gallon horizontal tank for storing lubricity additive for diesel fuel | FGFACILITY |
| EUTANK15 | 30,000 gallon fixed roof tank for ethanol | FGETHANOLTANKS |
| EUTANK16 | 30,000 gallon fixed roof tank for ethanol | FGETHANOLTANKS |
| EUTANK19 | 8,000 gallon horizontal tank for storing gasoline additive | FGFACILITY |
| EUTANK21 | 560 gallon underground knockout tank | FGFACILITY |
| EUTANK22 | 10,000 gallon underground petroleum contact water (PCW) tank | FGFACILITY |
| | | |

| | | |
|---|---|---|
| EUTANK23 | 10,000 gallon fixed roof petroleum contact water tank | FGFACILITY |
| EUTOTE18 | 550 gallon red dye storage tote | FGFACILITY |
| EULOADRACK | Three-bay, twelve-arm loading rack with vapor combustion unit | FGFACILITY |

The following conditions apply to: EULOADRACK

NOTE: TANKS #3 AND #4 SUPPLY THE LOADRACK THROUGH ONE COMMON LINE. THEREFORE, THE THROUGPUT AND EMISSIONS THEY REPORTED ARE SPLIT BETWEEN THE TWO. ALSO, TANKS #15 AND #16 ARE FLOATED TOGETHER SO THERE THROUGHPUTS AND EMISSIONS ARE EQUALLY SPLIT BETWEEN THE TWO ALSO.

DESCRIPTION: Three-bay, twelve-arm loading rack with vapor combustion unit

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: vapor combustion unit

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. VOC | 30 mg per liter loaded | Test protocol* | EULOADRACK | | R 336.1205 |
| 2. VOC | 56.0 tpy | 12-month rolling time period as determined at the end of each calendar month. | EULOADRACK | VI.3 | R 336.1205<br>R 336.1609 |
| *Test protocol shall specify averaging time | | | | | |

AQD Comment: Appears to be in Compliance with #1 and #2 Above. The facility tested the unit in October of 2007 and the results indicated emissions at 10.8 mg/l of gasoline loaded. According to Rich, they plan on testing the unit again in the summer of 2020. Staff wasn't sure if this was due to a MACT BBBBBB requirement or not because testing it again isn't included as a condition of the permit. Records reviewed by staff for period of December 2018 through November 2019 indicate VOC emissions at 18.7 tons.

II. MATERIAL LIMITS

| Material | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. gasoline | 244,700,000 gallons | 12-month rolling time period as determined at the end of each calendar month | EULOADRACK | VI.2 | R 336.1205 |
| 2. distillate fuel oil | 82,200,000 gallons | 12-month rolling time period as determined at | EULOADRACK | VI.2 | R 336.1205<br>R 336.1225 |

| | | | | | |
|---|---|---|---|---|---|
| | | the end of each calendar month | | | |
| 3. ethanol | 24,400,000 gallons | 12-month rolling time period as determined at the end of each calendar month | EULOADRACK | VI.2 | R 336.1205 |

AQD Comment: Appears to be in Compliance with #1 through #3 above. Records reviewed by staff for the period of December 2018 through through November 2019 indicate gasoline throughputs at 80,700,889 gallons, distillate at 35,730,040 and ethanol at 8,861,447.

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not load any organic compound through EULOADRACK unless all provisions of Rules 609 and 627 are met. (R 336.1205, R 336.1225, R 336.1609, R 336.1627, R 336.1910)

AQD Comment: Appears to be in Compliance. The facility appears to be complying with the VOC provisions of Rule 609 and 627. The facility loads with submerged piping, uses vapor collection when loading, has a tanker vapor tightness program in place, etc. According to Rich, the tanker tightness testing is tracked by computer. If the tankers are not tested every year, the system will lock them out if they try to load them. When drivers go to load, they will receive a warning 30 days prior to the expiration date of their current certification and for every day after that if necessary. For any new tankers that come in that aren't in the Citgo system, they physically do a walk around with an inspection check list. They will then require tightness testing every 12 months after that.

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EULOADRACK unless the vapor combustion unit is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes ensuring the presence of a flame in the vapor combustion unit during organic compound loading. (R 336.1205, R 336.1225, R 336.1609, R 336.1627, R 336.1910)

AQD Comment: Appears to be in Compliance. The facility leaves the pilot on the VCU in manual because sometimes the pilot won't operate on auto, especially during cold and windy weather. He said this isn't an issue during the day while they are there of course, but by putting it in auto it helps prevent getting call-outs during the night if it fails to ignite. Also, they have John Zink (the manufacturer of enclosed flare) come out bi-annually to service the flare. (See attached service record)

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall monitor, in a satisfactory manner, the throughput of gasoline, distillate fuel oil, ethanol, additives, and dyes for EULOADRACK on a monthly and 12-month rolling time period basis. (R 336.1205, R 336.1225)

AQD Comment: Appears to be in Compliance. The facility is doing this.

2. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the throughput of gasoline, distillate fuel oil, and ethanol for EULOADRACK, as required by SC II.1, II.2, and II.3. The permittee shall keep these records on file for a period of at least five years and make the records available to the Department upon request. (R 336.1205, R 336.1225)

AQD Comment: Appears to be in Compliance. The facility is doing this.

3. The permittee shall calculate the VOC emission rate from EULOADRACK monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep these records on file for a period of at least five years and make the records

available to the Department upon request. (R 336.1205)

AQD Comment: Appears to be in Compliance. The facility is doing this and keeping records in an acceptable manner.

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter/Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|---|---|---|---|
| 1. EULOADRACK | 96[1] | 35[1] | R 336.1225 |

AQD Comment: Appears to be in Compliance. The VCU, which as mentioned previously is an enclosed flare, appears to meet these dimension requirements.

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| FGFUELTANKS | Internal floating roof tanks for storing gasoline or distillate fuel oil. | EUTANK1, EUTANK2, EUTANK3, EUTANK4, EUTANK5 |
| FGETHANOLTANKS | Fixed roof tanks for storing ethanol. | EUTANK15, EUTANK16 |
| FGFACILITY | All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment. | NA |

The following conditions apply to: FGFUELTANKS

DESCRIPTION: Internal floating roof tanks for storing gasoline or distillate fuel oil.

Emission Units: EUTANK1, EUTANK2, EUTANK3, EUTANK4, EUTANK5

POLLUTION CONTROL EQUIPMENT: Internal floating roof

I. EMISSION LIMITS

| | | Time Period/ | | Testing / | Underlying |
|---|---|---|---|---|---|

| Pollutant | Limit | Operating Scenario | Equipment | Monitoring Method | Applicable Requirements |
|---|---|---|---|---|---|
| 1. VOC | 26.6 tpy | 12-month rolling time period as determined at the end of each calendar month. | FGFUELTANKS | VI.4 | R 336.1205 |

AQD Comment: Appears to be in Compliance with the above VOC limit. The records reviewed by staff for the period of December 2018 through November 2019 indicate emissions at 12.1 tons.

II. MATERIAL LIMITS

| Material | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. gasoline | 244,700,000 gallons | 12-month rolling time period as determined at the end of each calendar month. | FGFUELTANKS | VI.3 | R 336.1205 |
| 2. distillate fuel oil | 82,200,000 gallons | 12-month rolling time period as determined at the end of each calendar month. | FGFUELTANKS | VI.3 | R 336.1205, R 336.1225 |

AQD Comment: Appears to be in Compliance with #1 and #2 above. Records reviewed by staff for the period of December 2018 through November 2019 indicate gasoline throughput at 173,085,391 gallons and the diesel throughput was 64,633,732 gallons.

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EUTANK1 unless all provisions of Rule 604 are met. (R 336.1604, R 336.1910)

AQD Comment: Appears to be in Compliance. The facility appears to be complying with Rule 604. The tank is equipped with an internal floating roof (IFR).

2. The permittee shall not operate EUTANK2 unless all provisions of Rule 604 are met. (R 336.1604, R 336.1910)

AQD Comment: Appears to be in Compliance. The facility appears to be complying with Rule 604. The tank is equipped with an internal floating roof (IFR).

3. The permittee shall not operate EUTANK5 unless all provisions of Rule 604 are met. (R 336.1604, R 336.1910)

AQD Comment: Appears to be in Compliance. The facility appears to be complying with Rule 604. The tank is equipped with an internal floating roof (IFR).

4. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Kb, as they apply to EUTANK3 and EUTANK4. (R 336.1702(b), 40 CFR Part 60 Subparts A & Kb)

AQD Comment: Appears to be in Compliance. The facility is complying with this. They are also conducting quarterly inspections of all roofs, gaskets, seals, etc. Rich mentioned that Tank #3 is due for

an internal inspection in 2024 and Tank #4 in 2025. He said that they may look to remove the IFRs at this point because they are not required for diesel storage of course. He went on to say that they lose about 4 feet of storage capacity in these tanks due to the legs of the IFR.

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate any tank in FGFUELTANKS unless the tank's internal floating roof is installed, maintained, and operated in a satisfactory manner. (R 336.1205, R 336.1910, R 336.1702(b), 40 CFR Part 60 Subparts A & Kb)

AQD Comment: Appears to be in Compliance. The facility is complying with this requirement and they are conducting inspections of them on a quarterly basis.

VI. MONITORING/RECORDKEEPING
Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall monitor, in a satisfactory manner, the gasoline and distillate fuel oil throughput for FGFUELTANKS on a monthly and 12-month rolling time period basis. (R 336.1205, R 336.1225)

AQD Comment: Appears to be in Compliance. The facility is complying with this.

2. The permittee shall perform inspections and monitor operating information for EUTANK3 and EUTANK4 in accordance with the federal Standards of Performance for New Stationary sources as specified in 40 CFR Part 60 Subparts A and Kb. (R 336.1702(b), 40 CFR Part 60 Subparts A & Kb)

AQD Comment: Appears to be in Compliance. The facility is complying with this and keeping records of their inspections on all the components.

3. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the gasoline and distillate fuel oil throughput for FGFUELTANKS, as required by SC II.1 and II.2. The permittee shall keep these records on file for a period of at least five years and make the records available to the Department upon request. (R 336.1205, R 336.1225)

AQD Comment: Appears to be in Compliance. The facility is complying with this.

4. The permittee shall calculate the VOC emission rate from FGFUELTANKS monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep these records on file for a period of at least five years and make the records available to the Department upon request. (R 336.1205)

AQD Comment: Appears to be in Compliance. The facility is complying with this and keeping records in an acceptable manner.

5. The permittee shall keep records of inspections and operating information for EUTANK3 and EUTANK4 in accordance with the federal Standards of Performance for New Stationary sources as specified in 40 CFR Part 60 Subparts A and Kb. The permittee shall keep these records on file for a period of at least five years and make the records available to the Department upon request. (40 CFR Part 60 Subparts A & Kb)

AQD Comment: Appears to be in Compliance. The facility is complying with this.

The following conditions apply to: FGETHANOLTANKS

DESCRIPTION: Fixed roof tanks for storing ethanol.

Emission Units: EUTANK15, EUTANK16

I. EMISSION LIMITS

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. VOC | 1.24 tpy | 12-month rolling time period as determined at the end of each calendar month. | FGETHANOLTANKS | VI.2 | R 336.1205 |

AQD Comment: Appears to be in Compliance. Records reviewed by staff for the period of December 2018 through November 2019 indicate emissions at 1.20 tons.

II. MATERIAL LIMITS

| Material | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. ethanol | 24,400,000 gallons | 12-month rolling time period as determined at the end of each calendar month. | FGETHANOLTANKS | VI.1 | R 336.1205 |

AQD Comment: Appears to be in Compliance. Records reviewed by staff for the period of December 2018 through November 2019 indicate throughputs at 8,861,456 gallons.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall keep, in a satisfactory manner, monthly and rolling 12-month time period records of the ethanol throughput for FGETHANOLTANKS, as required by SC II.1. The permittee shall keep these records on file for a period of at least five years and make the records available to the Department upon request. (R 336.1205)

AQD Comment: Appears to be in Compliance. The facility is complying with this.

2. The permittee shall calculate the VOC emission rate from FGETHANOLTANKS monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep these records on file for a period of at least five years and make the records available to the Department upon request. (R 336.1205)

AQD Comment: Appears to be in Compliance. The facility is complying with this and are keeping records in an acceptable manner.

The following conditions apply Source-Wide to: FGFACILITY

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1. VOC | 89 tpy | 12-month rolling time period as determined at the end of each calendar month. | FGFACILITY | VI.1 | R 336.1205 |
| 2. any individual HAP | 8.9 tpy | 12-month rolling time period as determined at the end of each calendar month. | FGFACILITY | VI.1 | R 336.1205 |
| 3. total HAPs | 22.4 tpy | 12-month rolling time period as determined at the end of each calendar month. | FGFACILITY | VI.1 | R 336.1205 |

AQD Comment: Appears to be in Compliance with #1 through #3 above. Records reviewed by staff for the period of December 2018 through November 2019 indicate VOC emissions at 30.8 tons, Individual HAPs well under 8.9 tons (Toluene and Xylene were the highest at 0.4 and 0.3 tons respectively), and total HAPs were 1.2 tons.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall calculate the VOC, individual HAP, and total HAPs emission rates from FGFACILITY monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep these records on file for a period of at least five years and make the records available to the Department upon request. (R 336.1205)

AQD Comment: Appears to be in Compliance. The facility is complying with this requirement and keeping records in an acceptable manner.

After reviewing records in the office, staff went with Rich to look at several trucks being loaded and then the vapor combustion unit (enclosed flare). Staff noted during load-out that the vapor collection hoses were hooked up and the flare was in operation. According to Rich, they operate the flare even when diesel is being loaded because some tankers are loading both gas and diesel. He then showed staff where the vapor recovery lines go underground and then where they go through a knock-out tank (Tank #21) and then over to the flare. Staff asked if the same products are loaded out of the bays as they were previously. Rich stated that they were. He said that Bay #1 is mainly for diesel loading, Bay #2 is mainly gasoline but some diesel, Bay #3 is all gasoline, and what Rich called the E-Bay is for the off-loading of Ethanol and Bio-Diesel. Rich said that the E-Bay is used for Bio-diesel from approximately April through September/October and is used for Ethanol year round. He said that they didn't blend any Bio-Diesel this year because the market for it was down. Staff noted that the loading racks appeared pretty clean with just minor staining and they did not observe any of the equipment leaking. We then proceeded over to the flare. As mentioned previously, the flare was manufactured by John Zink. It has an operating temperature set-point of 1200 degrees F but it was slowly on the decline since the trucks in the bays had just finished loading. Staff then proceeded with Rich to their garage and warehouse area where he showed staff the extra hoses and equipment they keep on hand in case something should fail. We then proceeded back to the office where staff thanked him for his time. Staff mentioned that everything appeared to be in Compliance and Staff departed the facility at approximately 2:40 p.m.

INSPECTION SUMMARY: The facility appears to be in COMPLIANCE with the conditions of PTI No. 42-05B. As mentioned in the opening paragraph, a compliance determination with regards to 40 CFR Part 63 Subpart BBBBBB was not made since the AQD is not delegated by the EPA to enforce this regulation. The facility has been submitting reports to our division with regards to it though.

NAME Matt Dark DATE 12-20-19 SUPERVISOR RIL 12/20/19

JOHN ZINK HAMWORTHY COMBUSTION

VAPOR CONTROL UNIT PREVENTIVE MAINTENANCE (PM)

# VAPOR COMBUSTION UNIT (VCU) PM CHECKLIST

| | | | |
|---|---|---|---|
| Customer: | Citgo Niles | Manu. Equip. SO#: | 9065559 |
| Date: | 11-25-19 | PM SO#: | 9074328 |
| Location (City, State): | Niles, MI | Customer Equip #: | VCU |
| Phone Number: | 269-683-3420 ext 11/ Rich Green | Technician: | Jd Davis |
| Email Address: | rgreen1@citgo.com | Fax Number: | |
| Scheduled PM Frequency: | 2nd Semi-Annual | Manager: | Rich Green |

*Once a year perform an annual PM. The annual PM checks are located on a separate tab in the checklist below.

| Provide a summary of equipment condition both before and after inspection (Discuss with Operator) |
|---|
| **On-site to perform PMI on VCU. Checked all voltages, current and grounding in electrical panels. Checked voltages, current and grounding of purge blower. Inspected heat sheilding, pilots and thermocouples inside stack. Inspected Louvers to include linkage for proper operation and ease of movement. Checked Flame scanner for obstructions, alignment and cleanliness. Checked operation of Blove Valve and Assist Gas MOVs for proper operation and corrosion. Inspected pilot gas input for leaks, etc.** |

| Comments and Recommendations |
|---|
| **During inspection, noticed Pilot Tip cracked, pressure drop across FA is 3inches.** |

| Follow-Up Items | |
|---|---|
| 1. | **Replace Pilot Tip** |
| 2. | **Clean FA and Burner Tips** |
| 3. | **Prepare for Stack Test** |
| 4. | |

Declined Annual PM Work. The customer declined to have the following work performed during this inspection

[ ] PVRV Inspection [ ] Temperature Tracking [ ] Vapor Line Check

| | | | |
|---|---|---|---|
| Terminal Signature | **Rich Green** | Date | **11-25-19** |

| | Pass / Fail / Warn | | Comments |
|---|---|---|---|
| 1. | Visually check burner and stack -inside and outside (missing/degraded insulation & hot spots) | P | |
| 2. | Check anti-flashback burner tips for broken welds or elements | P | |
| 3. | Check for skid and stack anchor bolt condition | P | |
| A. | Any rust/corrosion, missing anchors, nuts, etc.? | P | |
| 4. | Inspect all electrical control enclosures for any apparent corrosion and/or moisture. | P | |
| 5. | Verify skid and conduit are grounded | P | |
| 6. | Verify voltage from N1 terminal to ground is 0.0 Volts A.C. | P | |
| | Note any deficiencies | | |

| | | Volts | | Comments |
|---|---|---|---|---|
| 7. | Verify control power | 125 | P | |
| 8. | Verify panel and actuator space heaters are working | | P | |
| | Note any deficiencies | | | |
| 9. | Gauges | | | |
| A. | All gauges going to 0 when off with no pressure? | | P | |
| B. | Gauges leaking or needing replacement? | | P | |
| C. | Replacements ordered? Which ones? | | N/A | awaiting customer approval |

**Note: Gauges should be replaced during the PM if they are broken. This should not show up as an unresolved action item**

| | | | Comments |
|---|---|---|---|
| 10. | Check vapor pressure transmitter goes to zero, if installed | N/A | |

| | | Type of Pilot Gas | Pressure Gauge for Pilot Gas | Type of Pilot |
|---|---|---|---|---|
| 11. | Verify pilot gas pressure. | Natural gas | 7psi | KE-1 |

·Normal operating pressure is approximately. 4 psig for propane or 7 psig for natural gas when using an enclosed combustor. (KE-1)

· Normal operating pressure is approximately 7 psig for propane or 10 psig for natural gas when using an elevated flare. (EEP/Stackmatch/FFG)

| | | | Note any Adjustments Made |
|---|---|---|---|
| 12. | Verify flame scanner has proper alignment | P | |

| | | | Comments |
|---|---|---|---|
| 13. | Verify proper flame scanner configuration | P | |

For IRIS; Gain9, Flame on relay3, FFRT Option 3 sec, RATIO 20%

| | | | Comments |
|---|---|---|---|
| 14. | Verify pilot ignition | P | |

| | | Record Pilot Signal | | Comments |
|---|---|---|---|---|
| 15. | Verify the pilot flame quality | 5vdc | P | stable signal |
| 16. | Verify unit will start and run in either manual or auto mode | | P | |
| 17. | On temperature controlled units, verify proper operation of dampers and assist gas valve. | | N/A | Assist gas MOV not utilized per customer |
| A. | Damper set point | 1200 °F | P | |
| 1. | Check dampers for loose/broken linkages bushings, etc | | P | |
| 2. | Check operation of damper | | P | |
| 3. | Damper should fail open on loss of power, normal cycle off or high temperature | | P | |
| B. | Temperature Control Valve (TCV) | | N/A | Assist gas MOV not utilized per customer |
| 1. | Assist gas valve set point | °F | N/A | Assist gas MOV not utilized per customer |
| 2. | Remove actuator cover. Any corrosion, loose parts, etc. | | N/A | Assist gas MOV not utilized per customer |
| 3. | Verify TCV is calibrated and FSPN (Fail Safe Position) setting is set to 3 so actuator will close on signal loss | | N/A | Assist gas MOV not utilized per customer |

| | | | Comments |
|---|---|---|---|
| C. | Honeywell Temperature Controller | P | |
| 1. | Configuration confirmed | P | |
| 2. | Configuration written down/saved | P | |

| | | 1st Stage | | 2nd Stage | | |
|---|---|---|---|---|---|---|
| | | Opens | Closes | Opens | Closes | Comments |
| D. | Vapor pressure measurement when: ("wc) | 2 | 0.5 | | | |
| E. | Comments | | | | | |
| F. | Pressure Switch/Transmitter working correctly? | | | | P | |

| 18. | Blower 1 | | | Blower 2 | | |
|---|---|---|---|---|---|---|
| | L1 | L2 | L3 | L1 | L2 | L3 |
| Amps | 5.1 | 4.9 | 5 | NA | NA | NA |
| | L1-L2 | L2-L3 | L1-L3 | L1-L2 | L2-L3 | L1-L3 |
| Volts | 468 | 469 | 474 | NA | NA | NA |

**CAUTION DO NOT CONTINUE TO RUN MOTORS IN AN OVERLOADED CONDITION**

| | | | Comments |
|---|---|---|---|
| 19. | Observe unit for proper operation of Motor Operated Valve(s) (MOV's) switching | | |
| A. | Remove all actuator covers | P | |
| B. | Check brakes, micro-switches & cams | P | |
| C. | Check Corrosion | P | |
| D. | Check valves seating (adjust if necessary) | P | |
| E. | Lubricate pivot points on brake assembly | P | |
| F. | Check/Verify all MOVs are sequencing properly | P | |
| 20. | Seal Fluid Concentration (if in use) | N/A | |
| A. | Verify glycol level in liquid seal is normal. | N/A | |
| B. | pH | N/A | |
| C. | Hydrometer Reading | at N/A | °F |
| D. | Calculated Concentration | Refractometer Reading | |
| E. | Corrective Action | NA | |

| | | Yes | No | Comments |
|---|---|---|---|---|
| 21. | Is a minimum operating temperature required? | | X | |

| | | °F | Comments |
|---|---|---|---|
| A. | If so, what temperature is required by customer permit? | | |
| B. | Temperature controller set point? | | |

| | | | Comments |
|---|---|---|---|
| C. | VCU can get to minimum temperature required on assist gas only (no rack vapors)? | N/A | Assist gas MOV not utilized per customer |

| | | Yes | No | Comments |
|---|---|---|---|---|
| D. | Is there a minimum temperature load permissive interlock on VCU system? | | X | |

| | | | Comments |
|---|---|---|---|
| E. | If there is a rack permissive interlock, turn off assist gas and verify permissive removed when temperature is below minimum set point. | N/A | |

| | | | | | |
|---|---|---|---|---|---|
| 22. | Differential Pressure reading across Flame/Detonation arrestor on VRU Vapor inlet | NA | "wc @ | | scfm from the rack |
| 23. | Check pressure drop across anti-flashback burner(s). | 3 | "wc @ | 4 | scfm from the rack |

***Note: When the differential pressure on the FAs or DAs indicates that they may be plugging notify the customer. The FAs or DAs can be cleaned on a Quoted or Time and Material basis.***

| | |
|---|---|
| Comments | |
| Date FA, DA, or burners were last cleaned | |

| | | | Yes | No | Comments |
|---|---|---|---|---|---|
| 24. | Temperature Recorder In Use | | | X | |
| | A. | Temperature recording correctly | | N/A | |
| | B. | Other Parameters (if applicable) recording correctly | | N/A | |
| | C. | Configuration Saved | | N/A | |

| | | | Comments |
|---|---|---|---|
| 25. | Verify thermocouple is working properly | P | |
| | Last date thermocouple was replaced | P | Jun-18 |
| | Provide comments if out of tolerance | | |

| | | | Comments |
|---|---|---|---|
| 26. | Perform system shutdowns tests on all applicable items. Verify motors shutdown and that all MOVs position themselves properly. | | |

| | | °F | | Comments |
|---|---|---|---|---|
| A. | High stack temp set point | | P | |
| B. | 1st stage high flame/detonation arrestor temp | | P | |
| C. | 2nd stage high flame/detonation arrestor temp | | N/A | |
| D. | Blower failure 1st Stage | | P | |
| E. | Blower failure 2nd Stage | | N/A | |

| | | PSI | | Comments |
|---|---|---|---|---|
| F. | Pilot gas pressure low set point | | P | |
| G. | Pilot gas pressure high set point | | N/A | |
| H. | Blower Failure from Phase Monitor (loss of 480V) | | N/A | |
| I. | Pilot flame failure 1st stage | | P | |
| J. | Pilot flame failure 2nd stage | | N/A | |
| K. | For GD GACT Requirement: After unit is running and permissive is established verify loss of "Rack Loading Permissive" when unit fails on a shutdown. | | P | |
| L. | Liquid seal low level | | N/A | |
| M. | Liquid seal high level | | N/A | |
| N. | Hydrocarbon area monitor | | P | |
| O. | Combustion stack area low temperature shutdown set point | | N/A | |
| P. | ESD | | P | |
| Q. | Loss of power | | P | |
| R. | 1st Stage MOV block valve failure | | P | |
| S. | 2nd Stage MOV block valve failure | | P | |
| T. | Verify Sump Tank High Level Shutdown | | N/A | |