DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B187758702

FACILITY: Guardian Industries-Carleton		**SRN / ID:** B1877
LOCATION: 14600 ROMINE RD, CARLETON		**DISTRICT:** Jackson
CITY: CARLETON		**COUNTY:** MONROE
CONTACT: Benjamin Kroeger , Environmental, Health & Safety Manager		**ACTIVITY DATE:** 06/22/2021
STAFF: Brian Carley	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled on-site inspection		
RESOLVED COMPLAINTS:		

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PURPOSE

On June 22, 2021, I arrived at the facility and met with Ben for the purpose of determining compliance of Guardian Industries with their ROP No. MI-ROP-B1877-2021a. They currently have a minor mod request submitted to AQD to remove Table EUSEAMER from their ROP.

BACKGROUND

Guardian Industries has two lines that manufacture glass using the float method with each line's emissions being controlled by its own control device consisting of a dry scrubber, particulate filter, and selective catalytic reduction. Float glass uses common glass-making raw materials, typically consisting of sand, soda ash (sodium carbonate), dolomite, limestone, and salt cake (sodium sulfate) etc. Other materials may be used as colorants, refining agents or to adjust the physical and chemical properties of the glass. The raw materials are mixed in a batch process, then fed together with suitable cullet (waste glass), in a controlled ratio, into a furnace where it is heated to approximately 1,500 °C (~2,700 °F) and mixed to create molten glass that has a uniform composition per the requirements of the type of glass that is to be made.

The molten glass is then fed into a delivery canal and is poured onto a bath of molten tin. The glass flows onto the tin surface forming a floating ribbon with perfectly smooth surfaces on both sides and of even thickness. The glass ribbon is pulled through the tin bath by rollers at a controlled speed. Variation in the flow speed and roller speed enables glass sheets of varying thickness to be formed.

Once off the tin bath, the glass sheet passes through a lehr kiln, where it is cooled gradually so that it anneals without strain and does not crack from the temperature change. On exiting the "cold end" of the kiln, the glass is cut to size by machines with any waste glass sent to crushers to be recycled as cullet.

This facility also has two emergency generators, a fire pump, and a cold cleaner, which are other operations also covered by the ROP. The generators and the fire pump are subject to Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engine (RICE MACT) as an area source.

COMPLIANCE DETERMINATION

Unless otherwise noted in the inspection report all timeframes for the records received was June 1, 2020, through May 31, 2021.

Source-Wide

This table covers the hazardous air pollutants (HAP) emissions from all process equipment source-wide including equipment covered by other permits, grand-fathered equipment, and exempt equipment. Based on the records provided during the inspection, they highest total aggregate 12 month rolling total emitted was 1.38 tons of HAPS in August 2020. Most of the HAP emissions was selenium with a 12 month rolling total of 1.11 tons (also in August 2020). They are keeping track of the individual emissions of selenium and other HAP metals that are emitted from Line #2 as well as the aggregate totals (see attachment 1). This is well under the individual HAPs limit of 8.9 tons/year and 22.4 tons/year aggregate HAPs. I determined that they are complying with this table.

EU00079

This emission unit is also known as Line #1 of the two that manufacture glass at this facility by using the float method. The emissions from this line are controlled with a control device consisting of a dry scrubber, particulate filter, and a SCR. AQD received notification of the completion of the construction of the control device on August 15, 2019. They are permitted to use glass manufacturing HAP metals on this unit, which will make them subject to the National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources, 40 CFR Part 63 Subpart SSSSSS (Subpart SSSSSS) once they start using them to make glass on this line. At the time of the inspection, they have not used any glass manufacturing HAP metals (arsenic, cadmium, chromium, lead, manganese, and nickel) in the glass making process on this line. Any condition in this table related to Subpart SSSSSS was not reviewed as it has not gone into effect yet.

At the time of the inspection, they told me that they have not had any abnormally low production rate days (as defined in the permit) or needed to exclude any days from NOx and SO2 30 day rolling averages due to maintenance on the control device or applied to EPA for an alternative compliance option for NOx. Therefore, they had not had to use the equations listed in SC I.10 through 13 or record the hours per SC III.5 and VI.10. I asked for and received a spreadsheet for the tons of glass pulled for the periods of March 2021 through May 2021 and it showed that their raw glass production was well under their limit of 550 tons/day per SC II.1 and VI.8 (see attachment Doc 5-1). They can only burn natural gas in this emission unit (SC II.2), and they are monitoring and recording natural gas usage rates per SC II.2. I requested and received the natural gas usage for Line #1 for March through May 2021 (see attachment Doc 6-1). Their current malfunction abatement plan (MAP) was reviewed and approved on March 3, 2020 (SC III.1). They said that they have updated their MAP on May 24, 2021, but the updates were simple administrative changes related to how they designate shift managers or supervisors. This kind of update does not require AQD review or approval. The last canal change was done on this line on May 11 through 14, 2020 (SC III.2). They are maintaining the control device and recording the maintenance activities per SC III.3 (see attachment Doc 9-1). The last time they had a furnace startup was in 2014 after they had finished rebricking this line. They provided the SCR NOx removal efficiency for each day of the timeframe and it was above their permitted limit of 80% removal efficiency (see attachment Doc 12). At the time of the inspection, the control device was in operation and the ancillary equipment was operating properly (SC IV.1 through IV.4 and SC IV.6 through 9). They are complying with their PM and H_2SO_4 limits in Section I of this table per their last stack test done July 14, 2020, as required by

SC V.1 through 5 (see file for submitted report). They showed an emission rate of 0.04 lbs PM/ton glass pulled (PM permitted limit is 0.45 lbs/ton glass pulled) and a H_2SO_4 emission rate of 0.32 lbs/hr (permitted limit: 1.6 lbs/hr).

They are continuously monitoring NOx, SO_2, and flow using CEMS, which were last certified on July 15, 2020 (see file for RATA report) as required by SC VI.1 through 4. They provided the daily records for May 2021 of the NOx and SO_2 lbs/ton glass produced as required by SC VI.5 (see attachment Doc 15-1). They have not had a situation where they needed to recertify their CEMS since their last RATA (SC VI.6 and 7). They stated that they had to bypass the control during the requested timeframe for the following reasons (SC VI.9): September 7, 2020, for approximately 7 hours due to lightning strike on the substation; February 23, 2021, for approximately 3 hours due to maintenance on substation 11, which tripped the main breakers; and April 5, 2021, for approximately 11 hours due to hot fan 1 bearing failure and hot fan 2 malfunction. I requested and received the following daily information for the week of May 23rd (5/23/21 through 5/29/21) as required by SC VI.13: hourly NOx CEMS emissions (in ppm) before and after the SCR (see attachment Doc 21a-1); hourly SO2 CEMS emissions in lbs/hr (see attachment Doc 21b-1); the 30-day rolling average NOx removal efficiency as calculated each day (see attachment Doc 21c-1); and the 30-day rolling average SO2 emission rate as calculated each day (see attachment Doc 21d-1). They have submitted all required reports specified in Section VII of their ROP (see files), which include the annual and semiannual certification, RATA reports, and stack test results. I have determined that they are complying with this table.

EU00080

This emission unit is also known as Line #2 of the two that manufacture glass at this facility by using the float method. The emissions from this line are controlled with a control device consisting of a dry scrubber, particulate filter, and a SCR. This line is also subject to Subpart SSSSSS because they are now using a glass manufacturing metal HAP (chromium in the form of iron chromite) in their glass making process. During the week of June 22, 2021, they were conducting their annual stack tests and to determine compliance with the emission limits for PM and sulfuric acid mist per SC V.3 and V.4. They were also conducting RATAs on the CEMS to recertify the NOx (inlet and outlet), SO2 and flow CEMS (SC IV.5, VI.2, and Appendix 3 of MI-ROP-B1877-2021a). Mark Dziadosz and Trevor Drost, AQD – Technical Programs Unit (TPU), was present for the stack test on June 22nd and Mark was planning on being present for outlet RATAs, which were to occur on June 23rd.

At the time of the inspection, they told me that they have not had any abnormally low production rate days (as defined in the permit) or needed to exclude any days from NOx and SO2 30 day rolling averages due to maintenance on the control device or applied to EPA for an alternative compliance option for NOx. Therefore, they had not had to use the equations listed in SC I.12 through 15 or record the hours per SC III.5 and VI.11. I asked for and received a spreadsheet for the tons of glass pulled for the periods of March 2021 through May 2021 and it showed that their raw glass production was well under their limit of 650 tons/day per SC II.1 and VI.8 (see attachment Doc 5-2). They can only burn natural gas in this emission unit (SC II.2), and they are monitoring and recording natural gas usage rates per SC II.2 and SC VI.9. I requested and received the natural gas usage for Line #2 for March through May 2021 (see attachment Doc 6-2). Their current malfunction abatement plan (MAP) was reviewed and approved on February 22, 2018 (SC III.1). They said that they have updated their MAP on May 24, 2021, but the updates were simple administrative

changes related to how they designate shift managers or supervisors. This kind of update does not require AQD review or approval. The last canal change was done on this line on March 19 through 22, 2019 (SC III.2). They are maintaining the control device and recording the maintenance activities per SC III.3 (see attachment Doc 9-2). The last time they had a furnace startup was in October 2016, and compliance with SC III.4 and SC VI.12 was verified during the last inspection (see file for 7/9/19 inspection report). They provided the SCR NOx removal efficiency for each month of the timeframe and it was above their permitted limit of 80% removal efficiency (see attachment Doc 13). At the time of the inspection, the control device was in operation and the ancillary equipment was operating properly (SC IV.1 through IV.4 and SC IV.6 through 9). They are complying with their PM, H_2SO_4, glass manufacturing metal HAPS, and selenium limits in Section I of this table per their last stack test done September 16, 2020, as required by SC V.1 through 5 (see file for submitted report). They showed an emission rate of 0.06 lbs PM/ton glass pulled (PM permitted limit is 0.45 lbs/ton glass pulled), their selenium emission rate was 0.023 lbs/hr (permitted limit: 2.03 lbs/hr), their metal HAPs emission rate was 0.000023 lbs/ton glass pulled (permitted limit: 0.02 lbs/ton glass pulled), and a H_2SO_4 emission rate of 0.10 lbs/hr (permitted limit: 1.6 lbs/hr).

They are continuously monitoring NOx, SO_2, and flow using CEMS, which were last certified on June 24, 2020 (see file for RATA report) as required by SC VI.1 through 4. They provided the daily records for May 2021 of the NOx and SO_2 lbs/ton glass produced as required by SC VI.5 (see attachment Doc 15-2). They have not had a situation where they needed to recertify their CEMS since their last RATA (SC VI.6 and 7). They stated that they have not had to bypass the control during the requested timeframe (SC VI.10). I requested and received the following daily information for the week of May 23rd (5/23/21 through 5/29/21) as required by SC VI.13: hourly NOx CEMS emissions (in ppm) before and after the SCR (see attachment Doc 21a-2); hourly SO2 CEMS emissions in lbs/hr (see attachment Doc 21b-2); the 30-day rolling average NOx removal efficiency as calculated each day (see attachment Doc 21c-2); and the 30-day rolling average SO2 emission rate as calculated each day (see attachment Doc 21d-2). They provided me with a copy of their Notification of Compliance Status that they submitted to EPA on June 12, 2020 (see attachment 2). That document plus the other information gathered during this inspection meets the requirements of SC VI.15. They have submitted all required reports specified in Section VII of their ROP (see files), which include the annual and semiannual certification, RATA reports, and stack test results. They also provided the NOx emissions in tons/year from 2015 through 2020 that they used to compare with their baseline actual emissions and their pre-construction projections (see attachment 22). I have determined that they are complying with this table.

EUSEAMER

This table covers a seamer that utilizes a belt sander to remove sharp edges from the glass with the dust generated being collected by a baghouse. On May 6, 2021, Guardian had submitted a minor modification request to remove this emission unit from the ROP as it will be decommissioned and removed from the facility by July 1, 2021. I have verified that the emission unit has already been completely removed from the facility.

EUDUSTL1

This table covers a pulse jet dust collection used to filter glass particles from Line #1 crushing operation. This glass crusher was in operation at the time of the inspection and I did not see any

visible emissions coming from the exhaust of the dust collector. They are inspecting the dust collector daily and recording the pressure drop of the baghouse per SC VI.1. I asked for and received the daily inspection records for the months of March, April, and May 2021 (see attachment Doc 23). The records show that they are in compliance with their CAM plan with the pressure drop staying between 0 to 8 inches of water and that they have not had monitor downtime. Based on the records, they did not record any incident that required Method 9 readings during those 3 months (SC VI.3). They also recently replaced the pressure gauge on June 4, 2021, as required by SC VI.2. I determined that they are in compliance with this table.

EUDUSTL2

This table covers a pulse jet dust collection used to filter glass particles from Line #2 crushing operation. This glass crusher was in operation at the time of the inspection and I did not see any visible emissions coming from the exhaust of the dust collector when I drove in and when I left. They are inspecting the dust collector daily and recording the pressure drop of the baghouse per SC VI.1. I asked for and received the daily inspection records for the months of March, April, and May 2021 (see attachment Doc 23). The records show that they are in compliance with their CAM plan with the pressure drop staying between 0 to 8 inches of water and that they have not had monitor downtime. Based on the records, they did not record any incident that required Method 9 readings during those 3 months (SC VI.3). They have not had a need to replace the pressure gauge since the last inspection, which occurred on July 9, 2021 (SC VI.2). I determined that they are in compliance with this table.

EUL2WASTESILO

This table covers an 800 ft^3 air pollution control system waste silo equipped with a passive bin vent on the east side of the Line 2 waste management building. The waste silo is under vacuum by the waste blower package. They are maintaining the bin vent per SC IV.1 (see attachment Doc 24). I determined that they are complying with this table.

EUL1WASTESILO

This table covers an 800 ft^3 air pollution control system waste silo equipped with a passive bin vent on the east side of the Line 1 waste management building. The waste silo is under vacuum by the waste blower package. They are maintaining the bin vent per SC IV.1 (see attachment Doc 25). I determined that they are complying with this table.

EUFIREPUMP

This table covers a Rule 285(2)(g) exempt existing fire pump, which is an emergency compression ignition (CI) engine, 100-500 HP, subject to the RICE MACT. The fire pump has a non-resettable hour meter install on it as required by SC IV.1. As of the inspection, it was currently reading 446 hours total usage. They operated the fire pump for 16.9 hours in 2020, which is well below the 100 hours limit in SC III.1.a (see attachment Doc 26a). They have also only run the fire pump for 11.9 hours from January 1, 2021 through May 31, 2021 (see attachment Doc 26b). They have not had to run the fire pump for emergency situations during the requested timeframe (SC III.1.b). They do not utilize an oil analysis program (SC III.3) and Ben says that they change the oil on EUFIREPUMP annually. They do maintenance on the fire pump and record it (see attachment Doc 34), but they do need to do better at noting when they oil and filter change, air cleaner inspections, and hose and belt inspection per the RICE MACT. They do follow the manufacturer's maintenance plan

instead of developing one of their own per SC III.4. This is a diesel fuel fired pump; however, they are not keeping track of the usage rate on a monthly basis as required by SC VI.1. They do need to improve their recordkeeping for this unit, but it is not something to send them a violation notice on. This will be followed up on a later date.

FG00097

This table covers two diesel oil fired emergency backup electrical generators with a maximum rated capacity of 2500 brake horsepower (BHP) each. They are using ultra low sulfur diesel fuel (14.4 ppm sulfur based on supplier's analysis) for those generators, which is well below their limit of 0.04% sulfur by weight in the diesel fuel (see attachment Doc 36). They are keeping track of the operating hours and the amount of fuel consumed in the generators (see attachment Doc 35). They are below their limit of 51,000 gallons per 12 month rolling time period (SC II.1) reporting 3403.40 gallons total consumed during the timeframe (see attachment Doc 35). I requested additional information on the fuel usage data that they provided due to daily readings that showed small variations in fuel usage each day. Ben responded in an email that "*the variation you are observing in the manual field notes reflects thermal expansion associated with the contents of the tank and its effect on measurement gauges. The facility has verified fuel usage against available tracking systems and hours of generator operation. As an improvement to our recordkeeping, we know the fuel usage rate of both generators combined to be 143 gallons per hour. Two columns will be added to the Rolling Hours record to reflect monthly usage and 12 month rolling fuel usage.*" They were also below their limit of 700 generator-hours per 12 month rolling time period as determined at the end of each calendar month (SC III.1). The monthly 12-month rolling time period ranged from a minimum of 27.2 hours to a maximum of 57.8 hours of operation over the time period (see attachment Doc 37). They had two emergency situations during the requested timeframe where the generators ran. On September 7, 2020 and February 22, 2021, the generators were run due to a lightning strike and a circuit breaker tripping during repairs, respectively (SC III.3.a). However, the total hours for each event were not documented. All the other hours that the generators ran were for maintenance checks and readiness testing (SC III.3.b). The generators were inspected by Michigan CAT on April 5, 2021 (Generator #2) and April 6, 2021 (Generator #1). During that inspection, the air cleaner, hoses, and belt were inspected and recorded as required by SC III.4, VI.2, and VI.4.d (see attachments Doc 41 #1 and #2). Ben stated that they do not utilize an oil analysis program (SC III.5, VI.1) and that they change the oil on these units annually, which they last done on October 20, 2020 (see attachment Doc 41a). They do follow the manufacturer's maintenance plan instead of developing one of their own per SC III.7. They weren't required to submit an Initial Notification and Notification of Compliance Status for these units based on 40 CFR 63.6645(a)(5), which exempts emergency RICE units. They are maintaining the records required for the RICE MACT per SC VI.4. I also requested that they start submitting copies of the annual report that is required by the RICE MACT to AQD with their ROP annual certification starting in March 2022, since AQD is now delegated to implement the RICE MACT (SCVII.4). They do need to improve their recordkeeping for this unit, but it is not something to send them a violation notice on. This will be followed up on a later date.

FG00098

This table covers any cold cleaners (aka parts cleaners) that are on site at this facility. The cold cleaners that they use at this facility only use a biodegradable detergent. They are not currently

using any cold cleaners that use organic solvents that would be subject to this table. I determined that they are in compliance with this table.

Compliance Determination

They do need to improve on their recordkeeping for EUFIREPUMP and FG00097 concerning the operation of these units, which will be reevaluated during the next inspection. Based on the information that I received during my inspection and of the required reports that they have submitted, I have determined that this facility is complying with MI-ROP-B1877-2021a.

NAME Brian Culley DATE 7-7-21 SUPERVISOR