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

B187749544

FACILITY: Guardian Industries-Carleton		**SRN / ID:** B1877
LOCATION: 14600 ROMINE RD, CARLETON		**DISTRICT:** Jackson
CITY: CARLETON		**COUNTY:** MONROE
CONTACT: Michael Smolenski , EHS Manager		**ACTIVITY DATE:** 07/09/2019
STAFF: Brian Carley	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled targeted inspection and observations of RATA on Line 1 and 2 and the annual stack test on Line 2		
RESOLVED COMPLAINTS:		

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PURPOSE

On July 9, 2019 I arrived at the facility and met with Mike, Laura Rye, Compliance Engineer, and John Medvich, Engineering Technician, for the purpose of determining compliance with their ROP No. MI-ROP-B1877-2014a and Permit to Install (PTI) No. 16-17B (Line 2). They also have PTI No. 51-18 that covers the modification to Line 1, which was still under construction at the time of the inspection. Once the modification is completed, PTI No. 51-18 will be in effect. I was also there on June 25th and 27th to observe a relative accuracy test audit (RATA) of the continuous emission monitoring systems (CEMS) and the annual stack test on Line 2 and on July 10th for the RATA of the CEMS of Line 1.

BACKGROUND

Guardian Industries has two lines that manufacture glass using the float method. 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 "tin bath", a bath of molten tin, from a delivery canal and is poured into the tin bath. 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.

COMPLIANCE DETERMINATION

EU00079

This emission unit is also known as Line #1 of the two that manufacture glass at this facility by using the float method. They currently have a particulate matter (PM) limit for when they make clear glass (23.0 lbs./hour for raw glass production rates between 13.1 to 22.9 tons/hour) and for when they make tinted glass (29.2 lbs./hr for raw glass production rates between 18.7 to 22.9 tons/hr). I reviewed their records for the current year and these spreadsheets show all the materials and the amounts that they used to make their glass. Since this is confidential material because the recipe for the glass they are producing could be determined from this spreadsheet, I asked for and received an abridged version of the spreadsheets for the periods of January 2019 through June 2019. I was able to determine that they were meeting their PM and were within production rates specified (see Attachment 1). These records also comply with special conditions (SC) VI.1 and VI.2 that require them to keep daily production rates and salt cake to sand ratios. It also shows that they have not substituted any fuel or raw material in their glass production which meets the requirements of SC III.1. If they did have a lower glass production rates than those specified above, they would have to meet the allowable rate of emission rate based on Table 32 found in Appendix 9 of their ROP. They are also limited to producing 550 tons of raw glass per day. The highest rate that occurred during the period of January 2019 through June 2019 was February 23, 2019 where they produced 478.6 tons of glass pulled (see Attachment 1). There is also a limit on the salt cake to

sand ratio for when they produce tinted glass (18 lbs. salt cake/1,000 lbs. of sand). The limit for the salt cake to sand ratio for clear glass production depends on the amount of glass in tons produced per day. The limit if their production is 450 tons or less is 12 lbs. salt cake/1,000 lbs. of sand and if their production is 550 tons, then it is 10 lbs. salt cake/1,000 lbs. of sand. If it is between 450 and 550 tons pulled, then the limit is based on a linear interpolation between 12.0 and 10.0 lbs./1,000 lbs. of sand (see Attachment 1). I determined that they are in compliance with this table.

They are currently finishing construction of pollution control equipment for Line 1. Once they finish installing the secondary heat exchanger, Line 1 will need to start complying with the requirements of PTI No. 51-18. The pollution control equipment consists of a Selective Catalytic Reduction unit (SCR), a dry scrubber, and a particulate filter. During the week of June 24, 2019, they started running flue gas through the system to get the bags coated in the particulate filter and to start the shakedown of the equipment. On July 9 and 10, 2019, they conducted a RATA on the CEMS to initially certify the NOx (inlet and outlet), SO2 and flow CEMS. They have tentatively scheduled to do the stack tests to show initial compliance with the emission limits in PTI No. 51-18 in early September 2019.

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. They completed construction of the control device on April 13, 2015 and started using HAP metals in their glass manufacturing on June 24, 2015. They submitted notifications of these activities on April 15, 2015 and July 10, 2015, respectively (SC VII.4-6). This line is also subject to National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources, as specified in 40 CFR, Part 63, Subpart SSSSSS because they are now using selenium in their glass making process. During the week of June 24th, 2019, 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. They were also conducting RATAs on the CEMS to recertify the NOx (inlet and outlet), SO2 and flow CEMS (SC IV.3, VI.3, and Appendix 11 of MI-ROP-B1877-2014a). Mark Dziadosz, AQD – Technical Programs Unit (TPU), was present for those RATAs. During the stack test, the stack testers had an equipment failure (manlift started malfunctioning) at the end of the second run. After talking with Tom Gasloli and Mark Dziadosz of TPU, it was determined that if they couldn't get the manlift repaired within the next few hours or get another manlift on site then they could just use the results of the first two runs instead of waiting two weeks when they return to do the RATAs on Line 1. I received an email from Michael Karter (Empire Stack Testing) on June 27, 2019 (same day as the test) that they would not be able conduct the third run as the manlift had a bad boom position sensor and it would not be fixed until the following Monday at the earliest. They were able to retrieve the sample train with a manlift that was tall enough at its maximum height to reach it but not tall enough to safely conduct the third run.

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 do maintenance on the control device therefore they had not had to use the equations in SC I.11 through 14 or needed to bypass the control device per SC III.2. I then reviewed the spreadsheets for the time period of January 2019 through June 2019 (SC VI.1 and VI.5). I asked for and received a spreadsheet for the tons of glass pulled for the periods of January 2019 through June 2019 and it showed that their raw glass production was well under their limit of 650 tons/day per SC II.1 and VI.1 (see Attachment 2). They are in compliance with their PM, H2SO4, and selenium limits in Section I of this table per their last stack test done July 21, 2015 for selenium and on July 16 and 17, 2018 for PM and H2SO4. They showed an emission rate of 0.11 lbs. PM/ton glass pulled (PM permitted limit is 0.45 lbs./tons of glass pulled), their selenium emission rate was below 0.35 lbs./hr (permitted limit: 2.03 lbs./hr), and a H2SO4 emission rate of 0.67 lbs./hr (permitted limit: 1.6 lbs./hr). 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 VI.2(see Attachment 3). Their current malfunction abatement plan was reviewed and approved on October 6, 2015 (SC III.1). At the time of the inspection, the control device was in operation and the ancillary equipment was operating properly (SC IV.1, IV.2, IV.5, IV.6, and IV.7). They are also maintaining and calibrating their CEMS. I asked for and received a printout of the calibrations that were done on July 6, 2019 (see Attachment 4). They are also continuously monitoring SO2, NOx and flow as required by SC VI.3. I asked for and received an example of the CEMS data that was collected on July 8, 2019 (see Attachment 5).

The last time they had a furnace startup was in October 2016. During the time period of August to October 2016, they shut down this line to perform a cold tank repair (rebricking). This activity is not considered reconstruction per § 60.292(c) of 40 CFR Part 60, Subpart CC – Standards of Performance for Glass Manufacturing, so they still are not subject to this regulation. After the furnace was finished being rebricked and the furnace was started back up, their records showed that their emissions were under the NOx and SO2 permitted emission limits of

6,996 lbs./day and 3,224 lbs./day, respectively. The furnace startup lasted less than 30 days and while they were bypassing the control device as allowed in their permit until the exhaust until it was technically feasible to operate the control device, they burned less than 5,000,000 scf of natural gas/day during that time period (allowed by footnote D at the bottom of emissions unit table). They had kept the records that were required in SC VI.6 during startup, which includes the amount of salt cake added to the batch materials, natural gas usage, excess oxygen percentage measured at the crown of the regenerator, and if they used thermal blankets or not. 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. The seamer 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 on a daily basis and recording the pressure drop of the baghouse on the days that this emission unit is operating. I asked for an received the pressure drops recorded in January through June 2019, which also includes the pressure drop readings for EUDUST1 and EUDUST2 (see Attachment 6). 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. I determined that they are in compliance with this table.

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, however, due to time constraints, I was not able to observe the dust collector operating. They are inspecting the dust collector on a daily basis and recording the pressure drop of the baghouse (see Attachment 6). 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. 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. A Method 9 was not done on this dust collector. They are inspecting the dust collector on a daily basis and recording the pressure drop of the baghouse (see Attachment 6). 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. I determined that they are in compliance with this table.

EUWASTESILO
This table covers an 800 ft3 air pollution control system waste silo on the east side of the waste management building. The waste silo is under vacuum by the waste blower package. There is a small exhaust a few inches off the ground for each waste blower while operating but no other exhaust. I will have to investigate further to determine if they are complying with this table.

EUWMBUILDING
This table covers Line #2 air pollution control system waste loading occurring in the waste management building. This dust collector does not vent to the out of the building and all emissions are contained within the building. They have requested in their ROP renewal application that this table be removed from the ROP. I determined that they are in compliance with this table.

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 (15 ppm sulfur) for those generators, which is well below their limit of 0.04% sulfur by weight in the diesel fuel (see Attachment 7). They are keeping track of the operating hours and the amount of fuel consumed in the generators (see Attachment 8 and 9). They are below their limits of 51,000 gallons per 12 month rolling time period reporting 2,806 gallons total consumed in 2018 and 700 generator-hours per 12 month rolling time period 85.4 hours of operation over the period of July 2018 through June 2019. They are maintaining the records required in Section VI of this table. I determined that they are in compliance with this table.

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 use either isopropyl alcohol or citrus based solvents. They currently have five cold cleaners on site and only two of them uses isopropyl alcohol. I reviewed the MSDS for the isopropyl alcohol and

found the information for the vapor pressure and they are keeping the information required by SC VI.2. I did verify if the lids were down and the operating procedures were posted in an accessible, conspicuous location during my inspection. I determined that they are in compliance with this table.

FGFACILITY

This table covers 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 emitted 1.3891 tons of HAPS total over the last 12 month rolling time period (July 2018 through June 2019). They are also keeping track of the selenium and other HAP metals that are emitted from Line #2, which they emitted 1.4593 tons of selenium and 1.4837 tons total HAP metals in 2018 (see Attachment 10). The facility total HAP emissions, based on the records reviewed during this inspection and their most recent MAERS submittal, is 2.2137 tons for calendar year 2018. 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 in compliance with this table.

Compliance Determination

The issue with the waste silo is a minor one at this time and will be investigated the next time I am at the facility. Aside from the issue of the waste silo, 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 in compliance with MI-ROP-B1877-2014a and PTI No. 16-17B.

NAME Brian Carley DATE 7/23/19 SUPERVISOR