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May 27, 2020

Ms. Amanda Chapel
Michigan Department of Environmental Quality
Kalamazoo District Office
7953 Adobe Road
Kalamazoo, MI 49009
269-910-2109



Subject: Response to May 11, 2020 Violation Notice

Dear Ms. Chapel,

Please accept this as the required response to the May 11th Violation Notice. The VN requires a response which includes: “the dates the violations occurred; an explanation of the causes and duration of the violations; whether the violations are ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the violations and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence”. The following narrative has been created to address these requirements as clearly and concise as possible. Please call or email me with any questions or concerns at any time.

- Dates:
 - 2/25/2020
 - Abnormal visible emission (VE) readings on E/W Fullers and N Fuller. The plant was shut down for 2 hours for investigation. TRG visolited (blacklighted) E/W Fullers - no bad bags found but vacuumed the clean side of both collectors. Pulsed down and vacuumed the clean side of N Fuller.
 - 2/27/2020
 - Abnormal VEs again for E/W and N Fullers. The plant was shut down for 3 hours 45 minutes. TRG visolited each and replaced suspect bags.
- Causes and Duration:
 - Based on our investigation, we believe that any excess particulate emissions would be related to leaking dust collector filter bags. As noted above, the initial inspection did not show any failing bags. Slight leaks may have been present on these days that were not detected using longstanding visolite inspection methods. Unfortunately, visoliting is not faultless in detecting leaking bags. Small leaks can be very difficult to identify even with the fluorescent visolite powder.
 - It is not possible to know the exact duration of any events caused by the leaking bags because they were fixed as soon as they were discovered, although the “normal” VE readings from the day before suggest the issue arose sometime the evening of 2/24 or morning of 2/25.
 - All dust collectors at TRG are blacklight tested monthly internally, and quarterly by a professional dust collection firm to ensure proper operation and bag integrity.
 - All dust collectors are maintained using a stringent Preventive Maintenance Program as required by permit terms and dust collection best practices.

Three Rivers Gray Iron

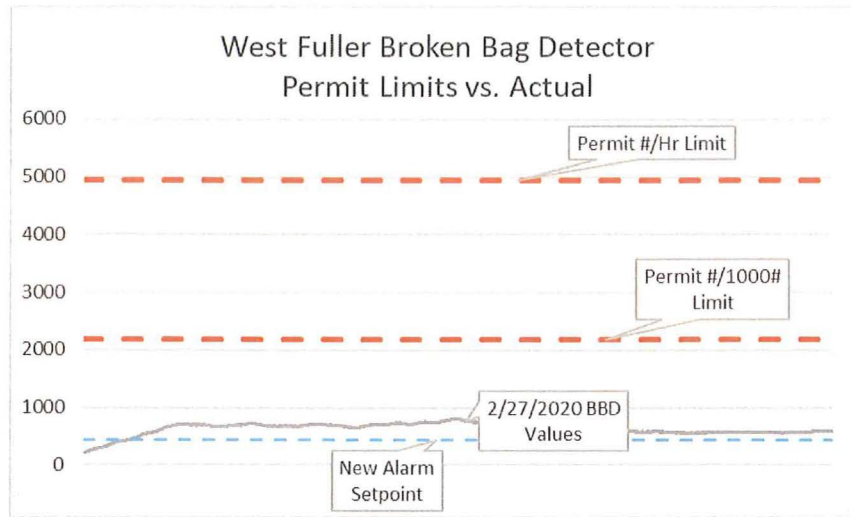
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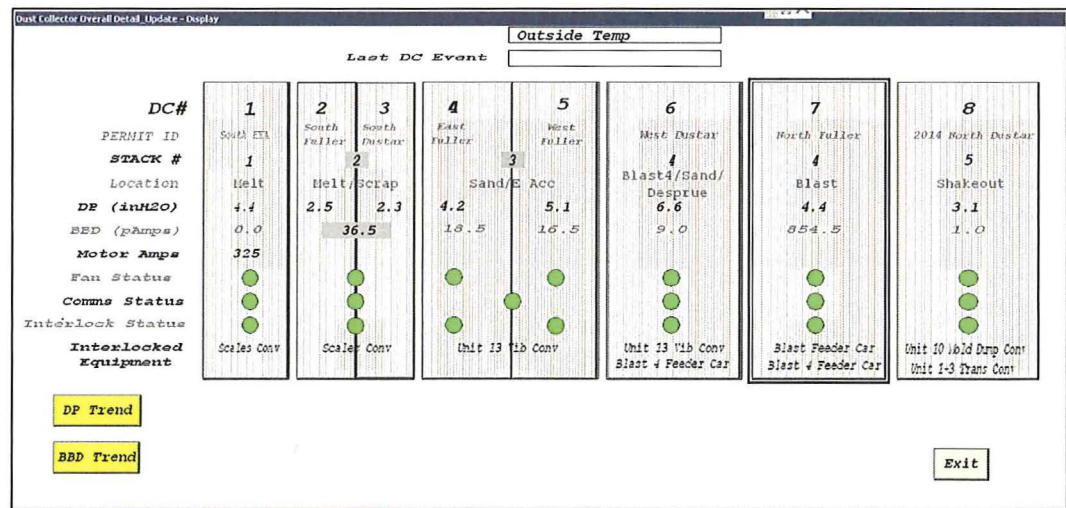
- The emissions related to the February incident were isolated and are not ongoing.
 - Please see the following summary of actions taken and associated attachments as support for this conclusion.
- Summary of actions taken and/or to be taken and associated dates:
 - In addition to the actions noted in the Date and Causes and Duration sections above, the replacement of all bags in the East, West, and North Fullers was ordered by the Plant Manager at a cost of \$24,321. The North Fuller was completed on 3/1/2020 and the East/West Fullers were completed on 3/7/2020. These bag replacements occurred ahead of scheduled dust collector maintenance programs.
- Steps being taken to prevent a reoccurrence:
 - Continue to conduct daily visible emission readings
 - Continue to monitor and record differential pressure of the baghouse
 - Continue to monitor the Bag Leak Detection System (BLDS) that TRG voluntarily installed on all dust collectors, with the following updates in response to these occurrences:
 - In order to determine why the BLDS did not catch the faulty bags prior to the VE readings, we contacted the manufacturer, FilterSense. The outcome of the discussions with FilterSense was a recommendation to conduct performance testing to correlate the BLDS signal to actual mass emissions. TRG hired Montrose Air Quality Services to conduct the performance test on 3/17/2020 for \$9,500. A discussion of the results follows:
 - The BLDS signal was monitored every 3 seconds during the test runs. The average signal (in picoAmps, or pA) was measured against the actual particulate emissions. This allows us to determine actual emissions by correlating the test results to the concurrent BLDS signal. The correlations are shown in the table below.

	#/hr per pA	#/1,000# gas per pA
E Fuller	2e-3	1.1e-5
W Fuller	3.2e-3	1.8e-5
N Fuller	4.6e-4	3.2e-6

- Using the data referenced above, we are able to go back and determine what the actual particulate emissions were during these periods of upset. The following graph shows the relationship between the actual emissions at that time and the permitted limits. It also shows the re-established alarm setpoint based on the performance test data. This graph shows data for the West Fuller. The East Fuller and North Fuller results are similar to the West Fuller but left out of this response for brevity.



- While the VN does not include any violations related to exceeding permit limits, the information obtained from the performance testing is interesting. It shows that TRG was operating well below the permitted thresholds during the times related to the violations.
- TRG has designed and implemented new interlocks and alarms within its electronic controls system. This was already in place when the incidents took place, but we have used the information collected during the incident response to further refine the programs to ensure such issues are flagged immediately. The screenshot below shows the new program and the associated interlocks (green dots). In the event an environmental indicator gets out of range (e.g. differential pressure exceeds allowable limit), interlocks are triggered to shut down the emission unit that the malfunctioning dust collector is controlling.





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- MTI has implemented a quarterly Dust Collector Health Review for each facility.
 - This is a quarterly meeting between Plant Manager, Maintenance Manager, Facility Environmental Representative, and corporate environmental department to review new issues with collectors and trends related to differential pressure, VEs, and BLDS signals.
 - The goal of this is to identify and address emerging problems before they become compliance issues.
- MTI has made the decision to pursue an ISO 14001 compliant Environmental Management System. While we believe we have always had a very strong EMS, the decision to pursue ISO 14001 accreditation further demonstrates our commitment to our shared environment, the process of continual improvement, and the third-party verification of such.

I hope that this effectively addresses all of your concerns and you come to the conclusion that TRG has, and continues to operate in an environmentally conscientious manner. It is the standard of all MTI facilities to operate within regulatory limits at all times, so these incidents are considered unacceptable and the response is taken very seriously.

Again, please do not hesitate to reach out with any additional questions, comments, or concerns. I can be reached at 260-920-2137 or dplant@metal-technologies.com at any time.

Respectfully,

A handwritten signature in black ink, appearing to read 'Dan Plant', is written over a light blue horizontal line.

Dan Plant
Director of Environmental Engineering
Metal Technologies of Indiana, LLC

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