



United States Steel Corporation  
Great Lakes Works  
Environmental Department  
No. 1 Quality Drive  
Ecorse, Michigan 48229

May 21, 2021

Ms. Katherine Koster  
Environmental Engineer Specialist  
State of Michigan, Department of Environment  
Great Lakes, and Energy  
Air Quality Division, Detroit Office  
3058 W. Grand Blvd, Suite 2-300  
Detroit, MI 48202

Ms. Jenine Camilleri  
Enforcement Unit Supervisor  
State of Michigan, Department of Environment,  
Great Lakes, and Energy  
Air Quality Division  
P.O. Box 30260  
Lansing, MI 48909-7760

**SENT VIA ELECTRONIC MAIL AND CERTIFIED MAIL**

**SUBJECT: United States Steel Corporation – Great Lakes Works  
No. 5 Pickle Line Fume Scrubber  
Violation Notice dated April 30, 2021**

Dear Ms. Koster:

On April 30, 2021, U. S. Steel – Great Lakes Works (U. S. Steel) received a violation notice (VN) dated April 30, 2021 from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) after its review of the stack test report for the No. 5 Pickle Line scrubber test performed on February 16, 2021. In the notice, EGLE alleges U. S. Steel exceeded the Hydrochloric Acid emission limitations required by ROP No. 199600132d, Table E-01.08, Section II.B. The Department also alleges such emissions were in violation of 40 CFR Part 63, Subpart CCC §63.1157(a)(1) and (2) and AQD Consent Order No. 2020-11, Paragraph 9.A.

U. S. Steel received the draft results for the February 16, 2021 stack test on March 1, 2021. U. S. Steel immediately began to investigate and look for potential causes for the unexpected test results. On March 2, 2021 U. S. Steel conducted a thorough inspection of the fume scrubber after the No. 5 Pickle Line was shut down and the unit cooled down sufficiently to safely allow for personnel to look inside. The following is a list of items inspected and their findings:

- U. S. Steel personnel inspected the scrubber internals. The internals were inspected with and without the fan running, and with varying water flowrates. No deficiencies were identified inside of the scrubber.

- All 9 of the make-up water nozzles were found to be in working order, with an appropriate spray pattern emanating from each.
- The recirculation water spray header was also determined to be in proper working condition. There were no flow obstructions evident and water distribution to the packing was observed to be evenly dispersed across the top of the packing media.
- The mist eliminator at the top of the scrubber was inspected and found to be in proper working condition. The mesh pad was examined both with the fan off and while running to ensure it was not shifting while the scrubber was operating (which it was not).
- The packing media was recently changed in October 2020, and the hold-down grating for the media was found to be intact and situated properly.
- U. S. Steel inspected the following drains for the scrubber system and found no issues: fume scrubber sump drain located at the bottom of the scrubber tower, the stack drain, the demister box drain, and the fan housing drain.

After U. S. Steel completed the inspection on March 2, 2021, no major deficiencies were found with the fume scrubber, or any of the associated equipment. U. S. Steel then contacted multiple fume scrubber manufacturers to provide guidance on other potential causes for the sudden and unexpected decrease in fume scrubber efficiency that was reported to have occurred during the February 16, 2021 test.

U. S. Steel conducted a follow up compliance demonstration the following week on March 11, 2021 with results indicating the Pickle Line fume scrubber was operating well within permitted requirements. U. S. Steel made the following adjustments between the February 16 and March 11, 2021 compliance tests:

1. The water flow rates for the scrubber were adjusted.
2. The fan damper was opened slightly to increase air flow through the scrubber.
3. A different lab was used to analyze the collected samples.

While U. S. Steel did adjust the scrubber water flows for the re-test, U. S. Steel does not believe this change was significant enough to cause the substantial increase in scrubber removal efficiency between the February 16 and March 11, 2021 tests, given that the scrubber was operated at the February 16, 2021 flows for multiple compliance tests with 99% or more removal efficiency. In addition, the increase in air flow during the March 11, 2021 test is not expected to have been a significant enough change to the system to cause the better performance as the increase was minor and was still much lower than historical levels from previous testing. The only other significant change made between the tests was to send the collected samples to a different lab, which EGLE personnel recommended.

U. S. Steel had also conducted the routine quarterly internal components inspection of the scrubber just prior to the February 16, 2021 compliance test. No deficiencies were found during the inspection and all fresh-water spray nozzles were replaced as required. U. S. Steel does not believe an issue within the scrubber could be the cause of any sudden and unexpected decrease in scrubber removal efficiency that was reported in the February 16, 2021 test, as the fume scrubber was found to be in similar and adequate condition prior to the each of these two compliance tests.

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Given all the above information, U. S. Steel cannot definitively provide the cause for the sudden and unexpected decrease in scrubber removal efficiency reported during the February 16, 2021 test. However, once U. S. Steel was provided the draft test results on March 1, 2021, the Company reacted quickly to resolve the issue and successfully conducted a follow up compliance demonstration on March 11, 2021.

U. S. Steel has since continued to investigate and discuss the results internally to ensure a similar event does not happen again. U. S. Steel has decided to revise the Pickle Line Operations and Maintenance Plan to further strengthen the preventative maintenance program for the scrubber, as well as incorporate the new outside fume scrubber for the offline acid storage tanks into the plan. U. S. Steel will submit a revised plan by June 18, 2021 and following the guidance in AQD Consent Order 2020-11 Paragraph 11.A.2 will implement the new plan within 60 days, or upon approval from EGLE, whichever is earlier.

U. S. Steel would like to thank EGLE for its approval of an expedited re-test for the fume scrubber. U. S. Steel is committed to maintaining compliance with all its applicable requirements, and maintains that the No. 5 Pickle Line was and has been operating at acceptable levels.

We would be pleased to address any questions or concerns the EGLE may have. If you have any questions regarding this matter or require additional information, please contact Alexis Piscitelli at 219-888-5280.

I certify that based off information and belief formed after reasonable inquiry, the information provided in this response is true and correct to the best of my knowledge and information.

Sincerely,



Daniel R. Brown  
General Manager  
U. S. Steel – Great Lakes Works



Alexis Piscitelli  
Senior Director, Environmental  
U. S. Steel – Great Lakes Works