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

N727059727

FACILITY: Nugent Sand Co., Inc.		**SRN / ID:** N7270
LOCATION: 4912 RUSSELL RD., TWIN LAKE		**DISTRICT:** Grand Rapids
CITY: TWIN LAKE		**COUNTY:** MUSKEGON
CONTACT: Joshua Puisis , Quality Control Manager		**ACTIVITY DATE:** 08/12/2021
STAFF: Scott Evans	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: On site air quality compliance inspection. Reporting violation notice issued.		
RESOLVED COMPLAINTS:		

Introduction

On Thursday, August 12, 2021, State of Michigan Department of Environment, Great Lakes, and Energy Air Quality Division (AQD) staff member Scott Evans (SE) conducted an air quality compliance inspection of the Nugent Sand Company facility located at 4912 Russell Rd. in Dalton, Michigan to assess compliance with all applicable air quality regulations. This was an unannounced, on-site inspection.

The Nugent Sand Company is a sand mining company that collects, sorts, and dries sand for use by other companies in other manufacturing processes. The sand is mined, carried to one of multiple stockpiles, after which it is brought to the wash plant. Conveyors carry the sand through the wash plant where it is washed and sorted into grades. The washed and sorted sand is sent to dump boxes and dried before cooling on the conveyors and elevators that carry the prepared sand to silos, where the sand is further sorted into various grades. The facility has the ability to mix sand to custom grades before being shipped off site. The facility has one associated Permit to Install (PTI): PTI No. 279-04A. This permit covers all permitted process equipment and flexible groups on site. The facility does not have boilers, generators, or other exempt equipment on site.

Approach

Upon arrival at the facility, SE observed the perimeter of the property. No odors were present, and no visible emissions (VEs) could be seen exiting facility property. After entering the work site, SE was greeted by Quality Control Manager Josh Puisis (JP). A brief discussion was held, during which SE explained the purpose of the visit, after which an inspection of the facility was conducted. The inspection included visual inspection of all process equipment as well as brief confirmation that necessary records were available as required. A detailed review of records was conducted off-site remotely after digital copies were provided to SE.

PTI No. 279-04A

This permit was first approved in 2004 and then was modified in November of 2011. It covers five emission units and one flexible group as listed below:

- EUSANDDRYER1
- EUSANDDRYER2
- EUSANDPROCESS
- EUTRUCKTRAFFIC
- EUSTORAGEPILES

EUSANDDRYER1

This emission unit includes a 10 mmBtu/hr natural gas sand drying bed and cooling bed. It utilizes a wet scrubber to control particulate matter (PM) that may be produced during the drying process. There are four emission limits outlined in the permit for this emission unit:

- 0.047 lbs of PM per 1000 lbs of exhaust gas.
- 5.0 pph of PM10
- 1.2 pph of PM25
- VEs shall not exceed 10% opacity over any six-minute average time period.

PM emissions are controlled by the wet scrubber associated with the emission unit. Records discussed below demonstrate proper function of the wet scrubber, which in turn demonstrates compliance with PM emission limits. Opacity levels from the dryer were below 10% during all periods of observation during the inspection, demonstrating compliance with opacity limits.

This emission unit has two associated material limits:

- No more than 2760 tons of sand produced daily and no more than 900,000 tons of sand produced annually for each 12-month rolling time period.
- Only natural gas may be burned in the sand dryer.

Records discussed below include production volumes and demonstrate compliance with production limits. During the inspection it was confirmed that only natural gas is used for the operation of the sand dryer.

The facility may not operate the emission unit unless a malfunction abatement plan (MAP) is on site and implemented. During the inspection it was confirmed that such a MAP was on site and available if needed.

This emission unit has four equipment parameters associated with it:

- The unit may not operate unless the wet scrubber is installed and operational.
- A scale that continuously shows throughput must be installed to operate the unit.
- A pressure loss monitor must be installed and functional on the wet scrubber.
- A flow rate monitor must be installed and functional on the wet scrubber.

During the inspection all of the above equipment was observed and confirmed to be operational. Record reviews below demonstrate that throughput is continuously monitored and recorded. During the inspection, this emission unit was not in operation and so no pressure drop or flow rate readings could be taken. The recording devices were observed to confirm presence.

When this permit was modified in 2011, the facility was required to submit test results to confirm PM2.5 and PM10 emission rates from this emission unit 180 days after commencement of startup of EUSANDDRYER2. Stack test results from August of 2012 that are held on file by the AQD show that the facility failed initial stack testing for PM 2.5 due to failed leak checks at multiple psi rating. A violation notice was issued at that time. The test was run again in 2013, this time with passing results to resolve the VN.

The facility is required to maintain the following records for the emission unit:

- Daily, monthly, and 12-month rolling annual throughput.
- Daily pressure drop and flow rate averages (two hour periods) for the wet scrubber.
- Pressure loss and flow rates for the wet scrubber during the most recent stack test.

Upon request, the facility provided records for the period of July 2018 through July 2021. Below is a snapshot of what the records demonstrated based on detailed review by SE:

- Daily records were reviewed and kept on site. All reviewed records were compliant with daily limit. Records were not retained by AQD as daily logs are printed individually. A sample of one is included with the report as an example.
- Highest monthly throughput was 21,232 tons in February of 2020.
- Highest 12-month period throughput was 185,556 tons from January 2020 through December 2020.
- Highest flow rate was 62.3 gallons per minute (GPM) on November 26, 2018. This is within the established range of 53-79 from the last emissions testing.
- Highest pressure drop was 9.9 inches of H_2O. This is above the minimum of 7.72 inches of H_2O as established in the most recent emissions testing.
- The most recent stack test was conducted in 2013. Results of this stack test were on file at the site and are available on file with the AQD.

These records demonstrate compliance with applicable limits and requirements.

The facility is required to submit exceedance reports semiannually. The most recent report was submitted in 2018. This was discussed with the facility. Exceedance reports were submitted along with other requested records to catch up on the missing reports. As the facility was not compliant with this requirement for over two years, a violation notice (VN) will be issued regarding this issue. No follow up will be required for the VN, however, as the records have been submitted at this time. Further actions may be taken if the facility fails to adhere to this requirement again in the future.

The emission unit has one associated stack. The stack was not measured during the inspection, but it appeared to meet the dimensional requirements outlined in the PTI.

The facility is required to comply with the rules outlined in New Source Performance Standard (NSPS) 40 CFR Part 60 Subparts A and UUU as applicable with the emission unit. Compliance with this is covered by compliance with semiannual exceedance reporting, emissions monitoring, and the most recent stack test as discussed above. As already stated, the facility has not been compliant with this requirement and so a VN will be issued.

<u>EUSANDDRYER2</u>
This emission unit includes a 16 mmBtu/hr natural gas sand drying bed and cooling bed. It utilizes a wet scrubber to control particulate matter (PM) that may be produced during the drying process. There are four emission limits outlined in the permit for this emission unit:

- 0.047 lbs of PM per 1000 lbs of exhaust gas.
- 5.0 pph of PM10
- 0.7 pph of PM2.5

- VEs shall not exceed 10% opacity over any six-minute average time period.

PM emissions are controlled by the wet scrubber associated with the emission unit. Records discussed below demonstrate proper function of the wet scrubber, which in turn demonstrates compliance with PM emission limits. Opacity levels from the dryer were below 10% during all periods of observation during the inspection, demonstrating compliance with opacity limits.

This emission unit has two associated material limits:

- No more than 2,880 tons of sand produced daily and no more than 1,050,000 tons of sand produced annually for each 12-month rolling time period.
- Only natural gas may be burned in the sand dryer.

Records discussed below include production volumes and demonstrate compliance with production limits. During the inspection it was confirmed that only natural gas is used for the operation of the sand dryer.

The facility may not operate the emission unit unless a malfunction abatement plan (MAP) is on site and implemented. During the inspection it was confirmed that such a MAP was on site and available if needed.

This emission unit has four equipment parameters associated with it:

- The unit may not operate unless the wet scrubber is installed and operational.
- A scale that continuously shows throughput must be installed to operate the unit.
- A pressure loss monitor must be installed and functional on the wet scrubber.
- A flow rate monitor must be installed and functional on the wet scrubber.

During the inspection all of the above equipment was observed and confirmed to be operational. Record reviews below demonstrate that throughput is continuously monitored and recorded. During the inspection, pressure drop was observed to be at 6.6 inches of H_2O and the flow rate was observed to be 59 gallons per minute.

When this permit was modified in 2011, the facility was required to submit test results to confirm PM, PM2.5 and PM10 emission rates from this emission unit 180 days after commencement of startup of EUSANDDRYER2. Stack test results from August of 2012 that are held on file by the AQD show that the facility failed initial stack testing for PM 2.5 due to failed leak checks at multiple psi rating. A violation notice was issued at that time. The test was run again in 2013, this time with passing results to resolve the VN.

The facility is required to maintain the following records for the emission unit:

- Daily, monthly, and 12-month rolling annual throughput.
- Daily pressure drop and flow rate averages (two hour periods) for the wet scrubber.
- Pressure loss and flow rates for the wet scrubber during the most recent stack test.

Upon request, the facility provided records for the period of January 2020 through July 2021. Below is a snapshot of what the records demonstrated based on detailed review by SE:

- Daily records were reviewed and kept on site. All reviewed records were compliant with daily limit. Records were not retained by AQD as daily logs are printed individually. A sample of one is included with the report as an example.
- Highest monthly throughput was 41,463 tons in October of 2020.
- Highest 12-month period throughput was 393,035 tons from January 2020 through December 2020.
- Highest flow rate was 54 gallons per minute on December 28, 2018. This is within the acceptable range of 44-66 gpm as established by the most recent emissions test.
- Highest pressure drop was 6.89 inches of H_2O on October 6, 2018. This is above the acceptable minimum of 6.012 inches of H_2O established in the most recent emission test.
- The most recent stack test was conducted in 2013. Results of this stack test were on file at the site and are available on file with the AQD.

These records demonstrate compliance with applicable limits and requirements.

When the modified permit was approved, the facility was required to notify the AQD upon completion of installation of this unit. Records of correspondence between the facility and the AQD at that time seem to demonstrate compliance with this requirement.

The facility is required to submit exceedance reports semiannually. The most recent report was submitted in 2018. This was discussed with the facility. Exceedance reports were submitted along with other requested records to catch up on the missing reports. As the facility was not compliant with this requirement for over two years, a violation notice (VN) will be issued regarding this issue. No follow up will be required for the VN, however, as the records have been submitted at this time. Further actions may be taken if the facility fails to adhere to this requirement again in the future.

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The facility is required to comply with the rules outlined in New Source Performance Standard (NSPS) 40 CFR Part 60 Subparts A and UUU as applicable with the emission unit. Compliance with this is covered by compliance with semiannual exceedance reporting, emissions monitoring, and the most recent stack test as discussed above. As already stated, the facility has not been compliant with this requirement and so a VN will be issued.

<u>EUSANDPROCESS</u>

This emission unit covers equipment used to wash, sort, store, and ship sand that is mined at the facility. It includes hoppers, conveyors, elevators, screens, and storage bins used for material handling, sorting, and blending of the sand into various product types. It also includes equipment used for loading trucks for shipment. Emissions are to be limited by minimizing drop distances of sand or by housing operations in indoor settings.

No equipment within the emission unit coverage may be operated by the facility unless the fugitive dust control plan (Appendix B of the permit) is in effect at the facility. Additionally, no equipment may produce excess opacity through visible emissions as outlined in Appendix A of the permit.

During the inspection, it was observed that some new equipment had been installed. Review of this equipment appeared to verify that it was all exempt as enclosed storage silos (exempt by Rule 284 (2)(k)) with appropriate fabric filters to prevent particulate matter escape. As these silos do not significantly increase potential opacity emitting from the facility, is appears that no permit modification is necessary at this time. The fugitive dust plan was present and in effect at the facility during the time of inspection.

Equipment is expected to be labeled in accordance with Appendix A of the permit. During inspection Labels could be clearly seen on equipment to identify which equipment applied to which process and dust control measures.

FGTRUCK&STORE

This flexible group includes truck traffic for shipment of product and piles of product waiting for shipment. EUTRUCKTRAFFIC and EUSTORAGEPILES are included in this flexible group.

This flexible group has an emission limit of no more than 5% opacity of visible emissions coming from stockpiles or as a result of vehicle traffic on facility property. During the inspection, no incidences of visible emissions exceeding this opacity limit were observed. The fugitive dust plan (Appendix B) includes methods of addressing these visible emission sources and the facility appeared to be following these expectations in accordance with permit requirements.

The facility is required (as outlined in Appendix B) to keep records of all water or dust suppressant applications. These records were available for review during the inspection, demonstrating compliance with this requirement.

Conclusion

At the conclusion of the inspection, the facility was not compliant with all requirements in PTI No. 270-04A. A violation notice will be issued for failure to submit NSPS semiannual exceedance reports. The facility appeared compliant with all other applicable air quality requirements.

NAME Scott Evans DATE 9/8/2021 SUPERVISOR HH