

ANNUAL REPORT TO THE
JOINT SUBCOMMITTEE STUDYING MEASURES TO REDUCE
EMISSIONS FROM COAL-CARRYING RAILROAD CARS
PER SENATE RESOLUTION NO. 257

Submitted by
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In accordance with the 1997 Virginia Senate Joint Resolution No. 257, Norfolk Southern Corporation (Norfolk Southern) summarizes the efforts to identify and mitigate fugitive coal dust emissions from its rail corridors and facilities in the Commonwealth during the calendar year 2016. This report illustrates Norfolk Southern's compliance with the resolution and our commitment to protect the environment.

Summary of Key Accomplishments in 2016

- Norfolk Southern's Performance Monitoring Plan remains fully implemented.
- The Trackside Monitor in Altavista, VA continues to monitor trains headed for the Tidewater area, providing timely and valuable feedback to the mines participating in Norfolk Southern's coal dust reduction program. The grading system for characterizing the dust emissions has been upgraded to be consistent with the grading system being used by other US railroads.
- The 1-800 Dusting Report Line continues to be available to record any complaints from persons and businesses located in the rail corridors through which Norfolk Southern transports coal. Norfolk Southern did not receive any Virginia complaints from the 1-800 line in 2016.
- Monitoring of particulate matter (PM10) near Lamberts Point in Norfolk, VA continues to demonstrate compliance with the national ambient air quality standards. Norfolk Southern successfully completed a voluntary data Quality Assurance Project Plan as submitted to the Virginia Department of Environmental Quality in 2015.

2016 Review

Performance Monitoring Plan

The Performance Monitoring Plan is Norfolk Southern's strategy for monitoring the effectiveness of coal treatments by participating mines and for identifying additional mines that may be encouraged to participate in the dust control program. The major components of the Performance Monitoring Plan currently implemented are:

- Trackage Monitor – Altavista, VA
- 1-800 Dusting Report Line
- Community Air Quality Monitoring at Lamberts Point in Norfolk, VA

The multi-component approach established by Norfolk Southern is designed to provide continuous and unbiased feedback on the performance of its dust control program with the Trackage Monitors and 1-800 line.

Norfolk Southern will continue the Performance Monitoring Plan in 2017. Norfolk Southern will, as it has done in the past, work to expand mine participation should the Trackage Monitors or the 1-800 Dusting Report Line identify significant sources. Norfolk Southern will also continue to participate as needed in the evaluation of advanced dust control agents for use in the coal dust treatment program.

Trackage Monitor - Altavista, VA

The Trackage Monitor at Altavista monitors both trains bound for export through Lamberts Point as well as those destined for regional domestic coal consumers. A continuing goal is to reduce the time taken to alert the mines of any evidence of treatment failure and thus to enable prompt corrective measures, if necessary. Establishing a baseline for the autonomous grading system used to monitor fugitive dust emissions started at Altavista in August 2015. Full implementation of that grading system occurred in 2016 once the baseline was populated with a sufficient number of trains.

The former fugitive emissions grading system was suspended after the first quarter of 2015. That grading system was replaced with one used by BNSF and Union Pacific railroads. Instead of a grading system based upon the maximum signal measured by a Realtime Aerosol Monitor (RAM) during a train's passage past a Trackage Monitoring site, the new grading system integrates the signal over the entire trains passage. This grading results in a value that better represents the total emissions from the coal load. Beginning in 2017, the annual summary will be expressed in terms of a Characteristic Dust Value (CDV) using the 2016 data as a baseline.

1-800 Dusting Report Line

There were no calls to the Virginia 1-800 Dusting Report Line in 2016. Historically, the Virginia 1-800 Dusting Report Line has received few calls, with only 6 total calls received since 2003, and no calls received over the last 3 years. The data from the Trackside Monitor sites suggest little material change from 2008 to 2016 in the number of dusting trains and/or the magnitudes of the detected dust signals.

Lamberts Point Community Air Quality Monitoring

The Lamberts Point Community Monitoring Program monitors airborne particulates in the area surrounding the Lamberts Point coal pier in Norfolk through the use PM10 monitors. In 2016, two PM10 monitors were collocated at the Hampton Roads Sanitation District (HRDS) waste water treatment facility adjacent to the pier. Norfolk Southern worked with the DEQ to follow their Quality Control guidelines for installing and operating this new dust monitor, and developed the Quality Assurance Monitoring Plan outlining the proper procedures for operating and maintaining an ambient air monitor. This plan was approved by the DEQ on July 27, 2015. The DEQ ambient air quality standards were not exceeded at any time in 2016. NS successfully completed the requirements of the Quality Assurance Monitoring Plan in 2016 and with DEQ concurrence has returned air monitoring at HRSD to one sampler.

Anticipated 2017 Program Improvements

Norfolk Southern will implement its advanced grading system installed in 2016 to evaluate the dust levels of the trains and grade them accordingly. This improved metric will help NS identify excessively dusty events.

Norfolk Southern will continue to explore ways to improve the efficiency of its dust monitoring and mitigation efforts.