Scott Pittenger  
Engineer, Environmental Remediation  
Norfolk Southern Corporation  
1200 Peachtree St, NE - Box 13  
Atlanta, Georgia 30309  

Re: Norfolk Southern Corp  
Director's Authorization  
Approval  
RCRA C - Hazardous Waste  
Mercer County  
OHR000181271

Subject: Closure Plan Approval  
RISK ASSESSMENT

Dear Mr. Pittenger:

On June 2, 2016, Norfolk Southern Railway Company (Norfolk Southern) submitted to the Ohio Environmental Protection Agency (Ohio EPA) a closure plan for several signal battery storage vaults (RCRA closure units) located between Mile Posts 120.0 and 136.4 from Celina to Fort Recovery, Ohio. The closure plan was submitted pursuant to the April 27, 2016 Director's Final Findings and Orders in order to demonstrate that Norfolk Southern's proposal for closure complies with the substantive requirements of Ohio Administrative Code (OAC) rules 3745-55-11 and 3745-55-12.

The owner or operator and the public were given the opportunity to submit written comments regarding the closure plan in accordance with the hazardous waste rule requirements. No public comments were received by Ohio EPA.

Based upon a review of Norfolk Southern’s submittal and follow-up communications, I conclude that the closure plan for the hazardous waste units between Mile Posts 120.0 and 136.4, as modified herein, meets the performance standard contained in OAC rule 3745-55-11, and complies with the pertinent parts of OAC rule 3745-55-12.

The closure plan submitted to Ohio EPA on June 2, 2016, by Norfolk Southern is hereby approved with the following modifications:
Sec. 2.1.2.2 Structures on Soil

1. **Item 6.** The closure plan states that for the large vaults, soil samples will be obtained from below the unit by “drilling at the location with the greatest potential for failure as observed in the inspection.” One shallow soil sample will be collected and a deeper soil sample will be collected.

If a large crack or opening is found at the bottom or side of the unit, or if there are multiple deep cracks on the unit, then additional soil samples should be collected from the area. If it is unclear where the greatest potential for a release could have occurred because the size of the structural failure (crack) is large or if there are multiple deep cracks, then additional borings should be made along the failure(s). These decisions can be discussed with Ohio EPA for concurrence.

Item 6 under section 2.1.2.2 of the closure plan is hereby changed to the following:

Samples from small cylinders and signal boxes will be obtained by advancement of hand auger borings adjacent to the structure near where the crack or potential failure point was observed. Samples for large vaults will be obtained by drilling at the location(s) with the greatest potential for failure as observed in the inspection. One sample of the soil from 0-1 foot beneath a sample location, and a second sample from 1-2 feet below a sampling location will be collected. The shallow sample will be submitted for Pb, Hg, and Se analyses. The 1-2 foot depth sample will be held, pending analysis of the 0-1 foot sample.

2. **Item 8.** The second sentence of item 8 states: “If the 0-1 foot soil sample analytical results exceed a site-specific background level in item #7c above, then a release is indicated. The 1-2 foot sample will be analyzed for the exceeded analyte(s), and if the result is below background levels then the nature and extent will have been defined.”

The 1-2 foot sample should be analyzed for all of the constituents of concern (COCs) (lead, mercury and possibly selenium), not just for the constituent that exceeded. The goal of the sampling event is to determine the extent of contamination from a possible spill/release from batteries and/or rectifiers. All constituents must be found to be below the risk standard to adequately define the unit.

The third sentence of item 8 is hereby modified to say the following: The 1-2 foot sample will be analyzed for all of the COCs (lead, mercury and
possibly selenium), and if the results are below background levels then the nature and extent will have been defined."

Sec. 2.1.2.3 Surficial Soil Sampling (Battery Fragments On Ground, Adjacent to Structures

3. The introductory sentence for this section states that battery fragments were observed at MPs 126.6A and 126.6B. The correct identification numbers for these units should be 126.5A and 126.6.

The first sentence in section 2.1.2.3 is hereby modified to reference mile posts 126.5A and 126.6.

4. After a September 23, 2016 call and subsequent communications with Norfolk Southern and their consultant, another closure strategy was discussed for the units at MP 126.5A and MP 126.6. In an October 3, 2016 email, the consultant provided a new closure strategy for the two areas.

Ohio EPA finds the new soil sampling methodology for MPs 126.5A and MP 126.6, provided by the consultant on behalf of Norfolk Southern, acceptable. Section 2.1.2.3 of the closure plan is hereby replaced with the following:

Battery fragments were observed on the ground surface in the vicinity of the small cylinders at MP 126.5A and 126.6. At MP 126.5, there is a battery fragment and a broken battery. At MP 126.6, battery fragments that had been on the ground surface were placed in the small cylinder during the December 2014 site visit, and AECOM marked these locations with pin flags. The small cylinder at MP 126.6 contains a broken battery.

For the broken battery at MP 126.5 and the small cylinder at MP 126.6, NSRC will remove the broken battery and cylinder for disposal and will excavate an approximately 3 feet by 3 feet area surrounding the items' positions to a depth of approximately 0.5 foot. The excavated soil will be segregated for profiling and disposal. Two confirmatory soil borings will be installed through the floor of each excavation, and soil sampling will follow the procedures described below.

For the battery fragment at MP 126.5, NSRC will remove the fragment and excavate two to three shovels of surface soil from beneath the battery fragment. For the flagged locations at MP 126.6, NSRC will only excavate two to three shovels of surface soil from these locations. NSRC will install a confirmatory soil boring through the bottom of the shovel holes, and soil sampling will follow the procedures described below. If additional battery fragments of similar size to the one at MP 126.5A are discovered
during fieldwork, this procedure of fragment removal, shovel excavation, and confirmatory soil sampling will be followed. For very small battery fragments that may be discovered, only fragment removal and shovel excavation will be performed.

Following confirmation that lead and mercury levels do not exceed background in the base of the excavations, the excavations will be backfilled with ballast.

The following confirmatory sampling scope will be performed to evaluate presence or absence of a release to surficial soil.

1. Soil borings will be installed at locations described above. Soil samples from 0-1 foot and from 1-2 feet below the base of the excavation will be collected. The 0-1 foot sample will be submitted for Pb and Hg analyses, and the 1-2 foot sample will be held, pending analytical results for 0-1 foot samples.

2. Laboratory analytical results for representative soil samples will be compared to site-specific background standards established for Pb and Hg, as determined in Item #7 in Section 2.1.2.2 above.

3. Soil sample analytical results that are below the site-specific background levels will indicate absence of a release. If the 0-1 foot soil sample analytical results exceed a site-specific background level, then a release is indicated. The 1-2 foot sample will be analyzed for lead and mercury, and if the results are below background levels then the nature and extent will have been defined. If the 1-2 foot sample analytical results exceed the site-specific background level, then a release is indicated, and this Closure Plan will be amended to present investigation methods to characterize the nature and extent of contamination.

Table 1 Structure Description and Closure Requirements

5. **MP 125.9** Under the “Rectifiers” column, the cell for MP 125.9 should state four rectifiers not zero. The General Observations and Waste Classification columns mention four rectifiers in this unit. The “Rectifiers” column from Table 1 of the closure plan is hereby modified to state that four rectifiers are at this mile post.

6. **MP 126.5A** Under the “Batteries” column, the cell for MP 126.5A should state that at least one battery is at this unit. The General Observations and Waste Classification columns mention broken battery pieces or battery
pieces present in this unit. The "Batteries" column from Table 1 of the closure plan is hereby modified to state that at least one battery is present at this mile post.

7. **MP 128.1** Under the "Rectifiers" column, the cell for MP 128.1 should state two rectifiers not zero. The General Observations and Waste Classification columns mention two rectifiers as being present in this unit. The "Rectifiers" column from Table 1 of the closure plan is hereby modified to state that two rectifiers are at this mile post.

Compliance with the approved closure plan, including the modifications specified herein, is expected. Ohio EPA will monitor such compliance. Ohio EPA expressly reserves the right to take action, pursuant to chapters 3734. and 6111. of the Ohio Revised Code, and other applicable law, to enforce such compliance and to seek appropriate remedies in the event of noncompliance with the provisions and modifications of this approved plan. Please be advised that approval of this closure plan does not release Norfolk Southern from any responsibilities regarding corrective action for all releases of hazardous waste or constituents from any waste management unit, regardless of the time at which waste was placed in the unit.

You are hereby notified that this action of the director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within 30 days after notice of the director's action. The appeal must be accompanied by a filing fee of $70.00 (made payable to "Ohio Treasurer of State") which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the director within three days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, Ohio 43215

When closure is completed, OAC rule 3745-55-15 requires the owner or operator of a facility to submit to the director of Ohio EPA, certification by the owner or operator and an independent, registered professional engineer, that the facility has been closed in accordance with the approved closure plan. The certification by the
owner or operator shall include the statement found in OAC rule 3745-50-42(D). These certifications should be submitted to:

Ohio Environmental Protection Agency  
Division of Environmental Response and Revitalization  
P.O. Box 1049  
Columbus, Ohio 43216-1049  
Attn: Erik Hagen, Manager, ERAS

A copy should also be sent to:

Ohio Environmental Protection Agency  
Division of Environmental Response and Revitalization  
Northwest District Office,  
347 North Dunbridge Road, Bowling Green, Ohio 43402.  
Attn: Michael Terpinski, Supervisor

If you have any questions about implementing this closure plan, contact Dawn Pleiman at (419) 373-3148.

Sincerely,

Craig W. Butler  
Director

c:  Erik Hagen, Manager, ERAS, DERR, CO  
    Michael Terpinski, Supervisor, DERR, NWDO  
    Mitch Mathews, Manager, DERR, CO  
    Colleen Weaver, Manager, DERR, NWDO  
    Don North, DERR, NWDO  
    Don Vogel, DERR, CO  
    Dawn Pleiman, DERR, NWDO  
    RCRAInfo Data Entry