

ORDNANCE SYSTEMS INC.  
Radford Army Ammunition Plant  
4050 Pepper's Ferry Road  
Radford Virginia 24141

September 7, 2016

Leslie Romanchik  
Hazardous Waste Program Manager  
Virginia Department of Environmental Quality  
629 East Main Street  
Richmond, Virginia 23219

**Subject: RFAAP Open Burning Ground (OBG) RCRA Subpart X Permit Renewal Application  
Soil Monitoring Program (Permit Attachment II.C) – Request for Revisions  
Separate Submittal for Response to Comments 12, 14, 18 and 30  
Radford Army Ammunition Plant, Radford, Virginia  
EPA ID#: VA1210020730**

Dear Ms. Romanchik:

In correspondence dated February 5, 2016, BAE Systems, Ordnance Systems Inc. (BAE) received the VDEQ's first technical review of the Resource Conservation and Recovery Act (RCRA) Subpart X permit renewal application for the open burning ground (OBG) located at the Radford Army Ammunition Plant (RFAAP). The February 5, 2016 correspondence requested a formal response to the notice of deficiencies (NODs) presented in the letter on or before March 7, 2016. On March 4, 2016, RFAAP submitted a request for an extension to the response deadline of March 7, 2016, in order to organize a meeting between the VDEQ and RFAAP to review the NODs. As a result of this request, VDEQ extended the response deadline to May 6, 2016, and a meeting was held between the parties on March 30-31, 2016. On April 29, 2016, RFAAP submitted to VDEQ a formal response to each NOD provided in VDEQ's technical review comments. As per VDEQ's request for a separate submittal, this letter provides additional supporting documentation required to address specific comments 12, 14, 18, and 30 in Section 1 of the February 5, 2016 first technical review.

**Request to Combine Soil Sampling Locations NB-1 and NB-2**

*(Re: Section 1, Specific comments 12, 14, and 18 provided in the February 5, 2016 first technical review – NOD)*

Section II.C.3.1 (Sample Locations), Section II.C.3.2 (Soil Monitoring Analyte List and Detection Determination), and Section II.C.4.1 (Sample Collection Order) of the OBG Soil Monitoring Program (Permit Attachment II.C) specify the collection of discrete soil samples from two random locations (NB-1 and NB-2) along the northern border boundary of the OBG. Soil samples from locations NB-1 and NB-2 are analyzed only for the constituents listed for non-burn pad sampling locations presented in Section II.C.3.2 (Soil Monitoring Analyte List and Detection Determination) and in footnote 10 of Table II.C-1 (Identification of Constituents of Potential Concern) of the Soil Monitoring Program.

The attached Table 1 summarizes the laboratory analytical results for soil samples collected from locations NB-1 and NB-2 for the soil monitoring events conducted from 2005 through 2015. As shown in Table 1, the historical analytical results from 2005 through 2015 for sample locations NB-1 and NB-2 generally were comparable between the two locations. Therefore, RFAAP recommends revising Section II.C.3.1, Section II.C.3.2, and Section II.C.4.1 of the OBG Soil Monitoring Program to consolidate sample locations NB-1 and NB-2 into one sampling location (NB), which will be selected from a random location along the northern border boundary of the OBG. These requested revisions were presented (in red-line/strike-out format) in Section II.C.3.1, Section II.C.3.2, and Section II.C.4.1 of the Soil Monitoring Program (Permit Attachment II.C) included in the OBG RCRA Subpart X permit renewal application.

**Request to Remove Constituents of Potential Concern from the Soil Monitoring Program**

*(Re: Section 1, Specific Comment 30 provided in the February 5, 2016 first technical review – NOD)*

The revised Soil Monitoring Program (Permit Attachment II.C) presented in the OBG RCRA Subpart X permit renewal application included a revised Table II.C-1 (Identification of Constituents of Potential Concern) with recommendations to remove the following 17 constituents from the soil monitoring list for burn pad locations PAD-1 through PAD-8:

- 1,1-Dichloroethene (Vinylidene chloride)
- 1,2-Dichloroethane
- 2,4-Dichlorophenol
- 2-Chlorophenol
- 3-Methylphenol
- 3-Nitrotoluene (meta)
- 4-Methylphenol
- 4-Nitrophenol
- Acetophenone
- Chlorobenzene
- Hexachloroethane
- Nitrobenzene
- Phenol
- Tetrachloroethene
- Tetryl
- Toluene
- Vinyl chloride

Table 2 (attached) summarizes the laboratory analytical results for the constituents listed above for the soil samples collected at monitoring locations PAD-1 through PAD-8 during the soil monitoring events conducted from 2005 through 2015. As shown in Table 2, the following constituents were not detected at concentrations greater than their respective permit-specified reporting limits (RLs) during any of the soil monitoring events conducted from 2005 through 2015:

- 1,1-Dichloroethene
- 1,2-Dichloroethane
- 2,4-Dichlorophenol
- 2-Chlorophenol
- 3-Methylphenol
- 4-Methylphenol
- 4-Nitrophenol
- Acetophenone
- Chlorobenzene
- Hexachloroethane
- Phenol
- Tetrachloroethene
- Tetryl
- Vinyl Chloride

Therefore, RFAAP requests that these constituents be removed from Table II.C-1 (Identification of Constituents of Potential Concern) of the Soil Monitoring Program for the OBG.

As shown in Table 2, 3-Nitrotoluene was detected at a concentration greater than the RL in the soil sample collected from location PAD-4 during the March 2010 monitoring event; however, the detected concentration was more than an order of magnitude less than the permit-specified Action Limit for 3-Nitrotoluene. 3-Nitrotoluene was not detected at concentrations greater than the RL in the soil samples collected at location PAD-4 prior to March 2010 or after March 2010. Additionally, 3-Nitrotoluene was not detected in the soil samples collected from any of the other sampling locations (PAD-1, PAD-2, PAD-3, PAD-5, PAD-6, PAD-7, and PAD-8) during any of the monitoring events conducted from 2005 through 2015. Therefore, RFAAP requests that 3-Nitrotoluene also be removed from Table II.C-1 (Identification of Constituents of Potential Concern) of the Soil Monitoring Program for the OBG.

As shown in Table 2, nitrobenzene was detected at concentrations greater than the permit-specified RL in the soil samples collected from locations PAD-1 through PAD-8 during the January 2008 monitoring event; however, the detected nitrobenzene concentrations were an order of magnitude less than the permit-specified Action Limit. Nitrobenzene was not detected at concentrations greater than the permit-specified RL in any of the soil samples collected from locations PAD-1 through PAD-8 during any monitoring events prior to January 2008 or after January 2008. Therefore, RFAAP requests that nitrobenzene also be removed from Table II.C-1 (Identification of Constituents of Potential Concern) of the Soil Monitoring Program for the OBG.

As shown in Table 2, toluene was detected at concentrations greater than the permit-specified RL in the soil samples collected from locations PAD-1 (January 2008 and March 2010), PAD-2 (November 2008), and PAD-4 (November 2005); however, the detected toluene concentrations were more than six orders of magnitude less than the permit-specified Action Limit. Toluene was not detected at concentrations greater than the RL at locations PAD-1, PAD-2, or PAD-4 during any other soil sampling events conducted through 2015, and toluene was not detected at concentrations greater than the RL in soil samples collected from any of the other sampling locations (PAD-3, PAD-5, PAD-6, PAD-7, and PAD-8) during any of the sampling events conducted from 2005 through 2015. Therefore, RFAAP requests that toluene be removed from Table II.C-1 (Identification of Constituents of Potential Concern) of the Soil Monitoring Program for the OBG.

Based on this information, RFAAP requests that these 17 constituents be removed from Table II.C-1 (Identification of Constituents of Potential Concern) of the Soil Monitoring Program for the OBG. These requested revisions were presented (in red-line/strike-out format) in Table II.C-1 of the Soil Monitoring Program (Permit Attachment II.C) included in the OBG RCRA Subpart X permit renewal application.

Additionally, the following 14 of the above-listed constituents are also included on the Corrective Action Program – Annual Groundwater Monitoring List (Permit Attachment VII.C) contained in Permit Module VII, Corrective Action and Groundwater Monitoring Program for the OBG:

- 1,1-Dichloroethene
- 1,2-Dichloroethane
- 2,4-Dichlorophenol
- 2-Chlorophenol
- 3-Methylphenol
- 4-Methylphenol
- 4-Nitrophenol
- Acetophenone
- Chlorobenzene
- Hexachloroethane
- Nitrobenzene
- Phenol
- Tetrachloroethene
- Vinyl Chloride

These 14 constituents have not been detected at concentrations greater than their respective quantitation limits in groundwater samples collected at the OBG since 2005 or earlier; therefore, RFAAP requested that these constituents be removed from the Corrective Action Program – Annual Groundwater Monitoring List (Permit Attachment VII.C) in the OBG RCRA Subpart X permit renewal application. If the VDEQ approves the removal of these constituents from the Soil Monitoring Program, RFAAP requests that VDEQ remove these 14 constituents from the Corrective Action Program – Annual Groundwater Monitoring List (Permit Attachment VII.C) as well.

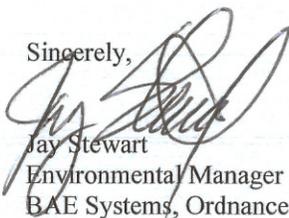
#### Procedural Justifications for Requested Revisions

Specific comments 12, 14, 18, and 30 listed in the February 5, 2016 first technical review each requested RFAAP to provide reference to a VDEQ-approved permit modification to allow for the reduced sampling (comments 12, 14, and 18 regarding consolidating soil sampling locations NB-1 and NB-2 into one location) and to remove the requested constituents (comment 30). RFAAP did not submit a permit modification for these requested revisions prior to submittal of the permit renewal application. However, VDEQ guidance regarding permit renewal applications (located at <http://www.deq.state.va.us/Programs/LandProtectionRevitalization/PermittingCompliance/WastePermits/HazardousWasteManagementFacilityPermit.aspx>) indicates that such revisions may be proposed in the permit renewal application process using the existing permit and, with a red-line and strike-out format, identify only the changes being proposed to the existing permit (necessary supporting documentation for the requested changes should also be included). RFAAP utilized this process in submitting the permit renewal application for the OBG RCRA Subpart X Permit Renewal Application. RFAAP also successfully utilized this process for renewal of the Final Hazardous Waste Post-Closure Care Permit for HWMUs 5 and 16 (original effective date October 4, 2002; reissued August 16, 2014).

RFAAP has previously received VDEQ approval for similar permit modification requests for the soil and groundwater monitoring programs at the OBG. In correspondence dated June 18, 2013, the VDEQ approved a Class 2 permit modification to remove one of two upgradient wells (13MW1) from the groundwater compliance monitoring network for the OBG. In correspondence dated September 27, 2011, the VDEQ approved a Class 3 permit modification which included a request to remove seven (7) constituents that had never been detected at concentrations greater than their respective Action Limits from the OBG soil monitoring program. Additional examples of similar approvals are available if needed.

Should you have any questions on this submittal or should you require further information, please contact me directly at (540) 639-7785 or via e-mail at [jay.stewart@baesystems.com](mailto:jay.stewart@baesystems.com).

Sincerely,



Jay Stewart  
Environmental Manager  
BAE Systems, Ordnance Systems Inc.

Enclosure:

Table 1: Open Burning Ground – Soil Monitoring Program Sample Locations NB-1 & NB-2 – Analytical Data Summary 2005-2015

Table 2: Open Burning Ground – Soil Monitoring Program Constituents Recommended for Removal – Analytical Data Summary 2005-2015

c: A. Scott, R. McAvoy, S. Iyer, J. King-Collins, H. Keceli, K. Kochan, VDEQ-CO  
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bc: J. Stewart, BAE Staff  
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J. Frazier, Draper Aden Associates  
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Concerning the following:

*RFAAP Open Burning Ground Permit Renewal Application NOD Response  
Radford Army Ammunition Plant, Radford, Virginia  
EPA ID#: VA1210020730*

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SIGNATURE:



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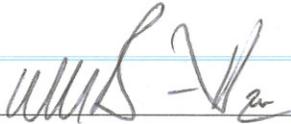
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