

STATE OF TENNESSEE

DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Solid Waste Management William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Ave, 14th Floor Nashville, Tennessee 37243

December 7, 2015

Mr. Joseph Kennedy Commander's Representative Holston Army Ammunition Plant 4509 West Stone Drive Kingsport, TN 37660

RE: Class ¹1 Permit Modification

Holston Army Ammunition Plant EPA ID Number: TN5 21-002-0421 Permit Number: TNHW-148 Modification Number 1 (A-1009)

Dear Mr. Kennedy,

The Division of Solid Waste Management (DSWM) has reviewed the September 28, 2015 Class ¹1 permit modification request to Hazardous Waste Permit TNHW-148. The modification request is for: 1) Adjusting the time frame allowed for decontamination of burn pans and lids in the Permit; 2) Providing clarification and including details of decontamination in the closure/post closure plan and, 3) Correcting a few typographical errors.

The DSWM approves the modification request. Enclosed please find a copy of the approved Class ¹1 Modification.

Approval of this permit modification request is in accordance with Rule 0400-12-01-.07(9)(c) of Tennessee Rule Chapter 0400-12-01, Hazardous Waste Management, and it is effective as the above date.

If you have any questions, please contact John Webb at John.C. Webb@tn.gov or 423-854-5465.

Sincerely

Patrick J. Flood. PE

Director

cc: Mr. Michael Norman, EPA Region 4 (Enclosure)

Mr. Carlos Merizalde, EPA Region 4 (Enclosure)

Ms. Ashley Holt, DSWM Nashville E-mail

Mr. Al Frakes, DSWM Nashville (Enclosure) E-mail

Ms. Jamie Burroughs, DSWM Nashville (Enclosure) E-mail

DSWM Central Office File TN5 21-002-0421 (Permit TNHW-148, Mod A-1009) (Enclosure) E-mail

DSWM Johnson City Field Office File 37-22-6 PM 37 (Enclosure)

State of Tennessee
Department of Environment
and Conservation
Division of Solid Waste Management

Hazardous Waste Management Program William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 14th Floor Nashville, Tennessee 37243

MODIFICATION TO HAZARDOUS WASTE MANAGEMENT FACILITY PERMIT

Permittee:

Holston Army Ammunition Plant

EPA ID No.:

TN5 21 002 0421

Permit Number:

TNHW-148

Units:

Burn Pan Units

Modification Type:

Class 11

Modification Number: 1 (A-1009)

Pursuant to the Tennessee Hazardous Waste Management Act of 1977, as amended (Tennessee Code Annotated 68, Chapter 212, Part 1) and the regulations promulgated thereunder by the Underground Storage Tanks and Solid Waste Disposal Control Board (found at Tennessee Rule Chapter 0400-12-01), hazardous waste permit number TNHW-148 issued to Holston Army Ammunition Plant on March 31, 2011, is hereby modified, pursuant to Rule 0400-12-01-.07(9)(c), as follows:

1. Paragraph III.F.10, is modified by changing the time required to thermally decontaminate the burn pans as follows:

All the burn pans that are determined by the permittee to be no longer usable for the thermal treatment shall be thermally decontaminated and recycled or disposed of as described in the Closure Plan in Attachment 6. Thermal decontamination shall occur during the first decontamination burn and within 180 days following removal of the burn pans from service. A report describing all the decontamination activities must be submitted to the Division, within 15 days of completion of decontamination.

- 2. Attachment 6 Section 6.1 Closure Plan,
 - a. In Section 6.1 <u>HSAAP Description</u> page 6.1-2, the sixth sentence was modified and the seventh sentence deleted to provide clarification as follows:

Area B manufacturing operations consist of the production of concentrated nitric acid for the manufacturing of explosive compounds, the production of explosive compounds, the blending of explosive compounds, the recovery of acetic acid, the concentration of acetic acid, and the manufacture of acetic anhydride. Explosive wastes are generated only in Area B. Open burning of waste explosive material is conducted in Area B at the Burn Pan Unit.

b. In Section 6.1 <u>Closure Performance Standards</u> page 6.1-3, the second sentence was modified to correct typographical errors as follows:

The explosives that will be considered will be the target analytes in U.S. EPA Method 8330 for the analyses of explosives. Target explosive analytes include

cyclotrimethylene trinitramine (RDX), cyclotetramethylene tetranitramine (HMX), 2,4,6-trinitrotoluene (TNT), o-nitrotoluene (2NT), m-nitrotoluene (3NT), p-nitrotoluene (4NT), trinitro-2,4,6-phenylamine (tetryl), nitrobenzene (NB), dinitrobenzene all isomers (DNB), 1,3,5-trinitrobenzene (TNB), and dinitrotoluene all isomers (DNT). Analytical results will be compared to the U.S. EPA Regional, Soil Screening Levels (RSL's) for chemical contaminants at Superfund sites or current approved levels.

c. In Section 6.1 <u>Maximum Waste Inventory</u> page 6.1-3, the first two sentences were modified to provide clarification as follows:

Explosive materials are neither stored nor accumulated at the Burn Pan Unit. As explosive waste materials are collected, they are transported to the Burn Pan Unit for treatment.

- d. In Section 6.1 <u>Inventory Removal and Disposal for Wastes and Burn Pans</u>, page 6.1-4 <u>Treatment Residue and Burn Pan Clay Liner</u>, items 3) through 6) and 8) through 10) were replaced as follows:
 - If the treatment residue passes the reactivity test, the treatment residue will be analyzed for the toxicity characteristic (TC) and applicable underlying hazardous constituents (UHCs). The TC constituents include arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, 2,4-dinitrotoluene, and nitrobenzene. The UHC analysis will be based on the manufacturing processes generating the explosive waste. While awaiting the results of the TC and UHC testing, the treatment residue may be temporarily stored in a roll-off dumpster or other container and managed as hazardous waste.
 - 4) If the treatment residue results exceed the regulatory TC and/or applicable UHC levels, the treatment residue will be removed from the pan(s) or temporary storage, placed into appropriate containers, and disposed of at an offsite hazardous waste TSDF landfill.
 - If the treatment residue results are below the regulatory TC and/or applicable UHC levels, the treatment residue will be removed from the pan(s) or temporary storage for disposal in the on-site Class II landfill. Safety may choose to thermally decontaminate the residue once more using the burn pile prior to disposal in the landfill.
 - The clay liner will be sampled and analyzed for the reactivity characteristic using the Impact Sensitivity Test.
 - 8) If the clay liner passes the reactivity test, the clay liner will be tested for the TC and applicable UHCs. The TC constituents tested will be arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, 2,4-dinitrotoluene, and nitrobenzene. The UHC analysis will be based on the

manufacturing processes generating explosive waste. While awaiting the results of the TC and UHC testing, the clay may be temporarily stored in a roll-off dumpster or other container and managed as hazardous waste.

- 9) If the clay results exceed the TC and/or applicable UHC levels, the clay will be removed from the pan(s) or temporary storage, placed into appropriate containers, and disposed of at an offsite hazardous waste TSDF landfill.
- 10) If the clay results are below the TC and/or applicable UHC levels, the clay will be removed from the pan(s) or temporary storage for disposal in the onsite Class II landfill. Safety may choose to thermally decontaminate the clay once more using the burn pile prior to disposal in the landfill.
- e. In Section 6.1 <u>Inventory Removal and Disposal for Wastes and Burn Pans, page</u> 6.1-5 **Burn Pans**, the paragraph was replaced as follows:

After all of the treatment residue and clay have been removed from the burn pans, the burn pans will be taken to the burn pile for thermal decontamination, inspected, certified as explosive-free, and sold for recycle as metallic scrap or disposed of in the on-site Class II landfill. The aluminum lids will be taken to the burn pile for thermal decontamination, inspected, certified as explosive-free, and also sold as metallic scrap or disposed of in the on-site Class II landfill. Thermal decontamination of metal that could be contaminated with explosives is required by the Department of Defense Explosives Safety Board (DDESB) before it can be released outside of Army control for recycling and by Safety for disposal in the on-site Class II landfill. The site's Title V permit allows the open burning of the pile containing potentially explosives-contaminated materials once per quarter. Burns are not necessarily conducted every quarter, so the pans and lids will be thermally decontaminated at the first opportunity after being removed from service. The concrete rail pan supports will be disposed of as a solid waste in the exempt area of the on-site Class II landfill after thermal decontamination in the burn pile per site Safety procedures.

f. In Section 6.1 <u>Assessment of Contamination</u>, page 6.1-5 the last sentence of the second paragraph was modified to correct a typographical error as follows:

The third and fourth phases, if necessary, depending upon the results of the first phase of sampling, will focus on the native soils underlying the compacted-clay liner.

The following enclosures are part of this modification including the replacement pages for Permit TNHW-148:

- 1. Enclosure 1 contains replacement page III-5 of Section III.
- 2. Enclosure 2 contains replacement pages 6-1.2 through 6-1.9 of Attachment 6.

This permit modification is further subject to and conditioned upon the terms, conditions, limitations, standards, and schedules contained in or specified in the enclosures that are a part of this modification. This modification is hereby made a part of Permit Number: TNHW-148, EPA ID No.: TN5 21 002 0421 and is effective as of December 7, 2015, and shall remain in effect until revoked and reissued, or terminated under Rule 0400-12-01-.07(9). Failure to comply with the terms of this modification shall constitute a violation of the Permit.

Date

ACEMBER 7, 2015

Patrick J. Flood, PE

Director, Division of Solid Waste Management

ENCLOSURE 1

- 6. The permittee shall remove spilled or leaked waste from the burn pan(s) and surrounding soils immediately after placement of material on the burn pan(s) in accordance with Attachment 8 of this permit.
- 7. The permittee shall manage ash and other residues, removed from the burn pan(s), in accordance with the procedures described in Attachments 8 of this permit.
- 8. Thermal treatment of the hazardous waste shall be conducted by qualified personnel, experienced in handling explosive hazardous waste material.
- The permittee shall provide adequate fire protection to ensure confinement and control of any fire resulting from the operation, as specified in the Attachment 5. The permittee shall notify the local fire department of the on-going nature of on-site thermal treatment of explosive waste, and shall allow local fire officials (State Department of Forestry or the Sullivan County Fire Marshal) to observe and provide additional fire protection.
- 10. All the burn pans that are determined by the permittee to be no longer usable for the thermal treatment shall be thermally decontaminated and recycled or disposed of as described in the Closure Plan in Attachment 6. Thermal decontamination shall occur during the first decontamination burn and within 180 days following removal of the burn pans from service. A report describing all the decontamination activities must be submitted to the Division, within 15 days of completion of decontamination.
- 11. The permittee shall conduct inspections of the miscellaneous unit including the covers, on each day of the thermal treatment and weekly when the unit is not in operation, in accordance with inspection check list in Attachment 4 of this permit, to detect precipitation, stains, residues from incomplete combustion, accumulation of storm water and integrity of burn pans and concrete bumpers including berms. If a significant deterioration of the concrete pads or joint sealant material is noted during inspections, the permittee shall re-evaluate the need for repairing the facility and the need for a protective coating on the burn pad. All the inspection reports including corrective actions must be recorded and kept as part of the operating records.
- 12. The permittee shall implement appropriate remedial actions for the problems discovered during the inspections conducted pursuant to the paragraph 13 of this subsection. For problems that cannot be remediated within 48 hours, the permittee shall notify the Division within three (3) working days and follow up with a written report within fourteen (14) days of discovering such problems. The report must include descriptions of the remedial actions taken. The permittee shall cease operation of the burn pan(s) until completion of the necessary repairs.
- 13. The permittee shall submit an annual report describing the activities at the burn pans, to the Division by March 1st for the previous year. The report shall include the following information:
 - (a) Description and quantity of each hazardous waste received and treated at the unit.

ENCLOSURE 2

Facility Holston Army Ammunition Plant

EPA Identification Number: TN5 21 002 0421

Permit Number: TNHW-148

ATTACHMENT 6.1 CLOSURE AND POST-CLOSURE PLANS

CLOSURE AND POST-CLOSURE PLANS

This Attachment contains the closure plan describing the steps necessary to permanently close the Burn Pan Unit at Holston Army Ammunition Plant (HSAAP). HSAAP would anticipate clean closure at the unit, however, contingent closure and post-closure plan is also provided herein in the event that contamination has occurred and it is not possible to achieve clean closure standards. The information provided in this Attachment includes closure plan, post-closure plan, notice in deed and certification, cost estimates, financial assurance mechanisms, and closure plan amendment.

CLOSURE PLAN

HSAAP Description

HSAAP is a government-owned, contractor-operated facility used for the manufacturing of explosive compounds and explosive formulations. HSAAP is located in Hawkins and Sullivan Counties in northeastern Tennessee. The plant is composed of two distinct manufacturing areas as well as explosive material storage magazines, industrial landfills, a wastewater treatment plant, and several office buildings that provide administrative, environmental, health and safety, and security support services. Area A manufacturing operations consist of refining and concentrating acetic acid and the production of acetic anhydride. These materials are then sent to Area B for use in manufacturing explosives. Area B manufacturing operations consist of the production of concentrated nitric acid for the manufacturing of explosive compounds, the production of explosive compounds, the blending of explosive compounds, the recovery of acetic acid, the concentration of acetic acid, and the manufacture of acetic anhydride. Explosive wastes are generated only in Area B. Open burning of waste explosive material is conducted in Area B at the Burn Pan Unit.

Burn Pan Unit Description

HSAAP conducts open burning of explosive wastes at the Burn Pan Unit located within the Burning Ground in Area B. Figure 6.1-1 shows the details of the Burn Pan Unit, which is the subject of this closure and post-closure plan. The Burn Pan Unit is surrounded by a berm. The entire area within the berms has a 6- to 8-inch compacted-clay liner. Security is provided by a chain-link fence, which surrounds the unit. The Burn Pan Unit contains four burn pans that are evenly spaced and positioned in the northeast, southeast, southwest, and northwest corners of the area. Within the Burn Pan Unit is a stormwater drainage system, a small storage shed, two resistance heating igniter assemblies, and two 3/4-inch water spigots.

Closure Performance Standards

Clean closure standards for hazardous constituents in soil (compacted clay and native soil) within the Burn Pan Unit include background levels, soil screening levels, or site-specific risk-based concentrations for explosives. The explosives that will be considered will be the target analytes in U.S. EPA Method 8330 for the analyses of explosives. Target explosive analytes include cyclotrimethylene trinitramine (RDX), cyclotetramethylene tetranitramine (HMX), 2,4,6-trinitrotoluene (TNT), o-nitrotoluene (2NT), m-nitrotoluene (3NT), p-nitrotoluene (4NT), trinitro-2,4,6-phenylamine (tetryl), nitrobenzene (NB), dinitrobenzene all isomers (DNB), 1,3,5-trinitrobenzene (TNB), and dinitrotoluene all isomers (DNT). Analytical results will be compared to the U.S. EPA Regional, Soil Screening Levels (RSL's) for chemical contaminants at Superfund sites or current approved levels.

Partial Closure Activities

The entire Burn Pan Unit is expected to remain in service throughout the active life of the facility. However, from time to time, one or more of the burn pans may be taken out of service for repair or replacement. The remaining pans within the unit would remain active. If a burn pan is taken out of service, the procedures described in this Attachment will be implemented for the burn pan. Replacement of burn pans is a normal part of operations during the active life of the facility. Replaced burn pans must undergo Equivalent partial closure. The Burn Pan Unit would not be closed.

Maximum Waste Inventory

Explosive materials are neither stored nor accumulated at the Burn Pan Unit. As explosive waste materials are collected, they are transported to the Burn Pan Unit for treatment. The maximum inventory of explosives ever present in the Burn Pan Unit is the explosive load limit or 5000 pounds net explosive weight (NEW). These quantities would be the maximum waste inventory ever present at the Burn Pan Unit at one time. Any explosive wastes present at the Burn Pan Unit would be treated in the burn pans before closure begins. When closure activities begin, no inventory of explosive wastes will remain at the Burn Pan Unit.

Inventory Removal, Disposal, and Decontamination of Equipment, Structures, and Soils

Closure of Miscellaneous Units

HSAAP operates a hazardous waste Burn Pan Unit. The Burn Pan Unit is classified as a miscellaneous unit. Methods for determining the presence of contamination, performing decontamination, and evaluating the effectiveness of decontamination during closure of the Burn Pan Unit are described in this Attachment.

Inventory Removal and Disposal for Wastes and Burn Pans

Wastes Treated

The maximum amount of waste materials present at the Burn Pan Unit at any one time would be 5000 pounds NEW of material. The quantity can be treated in one treatment event using all four burn pans. Prior to closure of the Burn Pan Unit, remaining material would be treated. Therefore, no untreated material would be within the Burn Pan Unit when closure activities begin.

Treatment Residue and Burn Pan Clay Liner

After treatment of the final volume of wastes, the burn pans will contain treatment residuals and clay liner. These materials will be managed as follows:

- 1) The treatment residue in each burn pan will be sampled and analyzed for the reactivity characteristic using the Impact Sensitivity Test.
- 2) If the treatment residue fails the reactivity characteristic test, it will be reburned. Step 1 will be repeated until the treatment residue passes the reactivity characteristic test.
- for the toxicity characteristic (TC) and applicable underlying hazardous constituents (UHCs). The TC constituents include arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, 2,4-dinitrotoluene, and nitrobenzene. The UHC analysis will be based on the manufacturing processes generating the explosive waste. While awaiting the results of the TC and UHC testing, the treatment residue may be temporarily stored in a roll-off dumpster or other container and managed as hazardous waste.
- 4) If the treatment residue results exceed the regulatory TC and/or applicable UHC levels, the treatment residue will be removed from the pan(s) or temporary storage, placed into appropriate containers, and disposed of at an offsite hazardous waste TSDF landfill.
- If the treatment residue results are below the regulatory TC and/or applicable UHC levels, the treatment residue will be removed from the pan(s) or temporary storage for disposal in the on-site Class II landfill. Safety may choose to thermally decontaminate the residue once more using the burn pile prior to disposal in the landfill.
- 6) The clay liner will be sampled and analyzed for the reactivity characteristic using the Impact Sensitivity Test.
- 7) If the clay liner fails the reactivity characteristic test, it will be reburned. Steps 6 and 7 will be repeated until the clay layer passes the reactivity characteristic test.
- 8) If the clay liner passes the reactivity test, the clay liner will be tested for the TC and applicable UHCs. The TC constituents tested will be arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, 2,4-dinitrotoluene, and nitrobenzene. The UHC analysis will be based on the manufacturing processes generating explosive waste. While awaiting the results of the TC and UHC testing, the clay may be temporarily stored in a roll-off dumpster or other container and managed as hazardous waste.
- 9) If the clay results exceed the TC and/or applicable UHC levels, the clay will be removed from the pan(s) or temporary storage, placed into appropriate containers, and disposed of at an offsite hazardous waste TSDF landfill.
- 10) If the clay results are below the TC and/or applicable UHC levels, the clay will be removed from the pan(s) or temporary storage for disposal in the on-site Class II landfill. Safety may choose to thermally decontaminate the clay once more using the burn pile prior to disposal in the landfill.

Burn Pans

After all of the treatment residue and clay have been removed from the burn pans, the burn pans will be taken to the burn pile for thermal decontamination, inspected, certified as explosive-free, and sold for recycle as metallic scrap or disposed of in the on-site Class II landfill. The aluminum lids will be taken to the burn pile for thermal decontamination, inspected, certified as explosive-free, and also sold as metallic scrap or disposed of in the on-site Class II landfill. Thermal decontamination of metal that could be contaminated with explosives is required by the Department of Defense Explosives Safety Board (DDESB) before it can be released outside of Army control for recycling and by Safety for disposal in the on-site Class II landfill. The site's Title V permit allows the open burning of the pile containing potentially explosives-contaminated materials once per quarter. Burns are not necessarily conducted every quarter, so the pans and lids will be thermally decontaminated at the first opportunity after being removed from service. The concrete rail pan supports will be disposed of as a solid waste in the exempt area of the on-site Class II landfill after thermal decontamination in the burn pile per site Safety procedures.

<u>Assessment of Contamination</u>

Following is a discussion of the sampling program that will be conducted at closure to determine whether the compacted clay/native soil at the Burn Pan Unit meets clean-closure standards

Sampling of the environmental media (compacted clay and native soil) within the Burn Pan Unit will be conducted in phases. The phased approach will allow HSAAP to determine the vertical and horizontal extent of any contamination within the Burn Pan Unit. The first and second phases will be focused on the compacted-clay-liner that lines the entire Burn Pan Unit. The third and fourth phases, if necessary, depending upon the results of the first phase of sampling, will focus on the native soils underlying the compacted-clay liner.

Compacted-Clay Liner Sampling and Analysis (Phases I and II)

The initial samples taken in Phase I will consist of four composite samples of the surface compacted-clay liner taken around each burn pan, each composite consisting of four grab samples, and one grab sample taken at the upgradient side of each of the nine drop inlets. One-half of each grab sample from around the burn pans will be used to form the composite and one-half will be retained. If analysis of a composite sample shows the presence of explosives, then each of the grab samples comprising the composite will be analyzed for the detected explosives. Subsequent sampling in Phases II, III, and IV will be based on the results of the Phase I sampling. Figure 6.I-2 shows the location of the Phase I sampling points. Surface (0-2 inch) samples will be collected from the compacted-clay liner in Phase I. These samples will be analyzed for the Method 8330 (or Division approved method) explosives (2NT, 3NT, 4NT, tetryl, NB, DNB, TNB, DNT, RDX, HMX, and TNT). If analysis indicates that explosives are not present above clean closure levels, then no additional sampling will be However, if the results from the surface samples indicate the presence of explosives above clean closure levels, then Phase II subsurface (4-6 inch) sampling of the compacted-clay layer will be conducted and analyzed for the Method 8330 explosives found to be present in Phase I.

Native Soil Sampling and Analysis (Phases III and IV)

If analysis of the subsurface compacted-clay liner indicates that explosives are not present above clean closure levels, then no further sampling will be conducted. The underlying native soils will be sampled and analyzed only if results from the subsurface compacted-clay layer is contaminated (Phase III sampling). Initially, a surface native soil sample (0-2 inch) will be collected and analyzed for the Method 8330 or (Division approve method) explosives detected during Phase II. If this layer shows contamination, then subsurface native soil sampling will be conducted in Phase IV for analytes found in Phase III. The subsurface native soil will initially be collected from 0-2 inches, 1 foot, and then in increments of 1 foot until contamination is no longer indicated or the groundwater table is reached, whichever comes first. Native soil samples will be tested for explosives by the current EPA Method. QA/QC will be conducted in accordance with methods described in SW-846 (or Division approved method). Upon completion of the sampling and analysis of native soil, the extent of any vertical and/or horizontal contamination, and an estimate of the size of the area affected, will be determined. Based upon this data, a determination will be made as to whether further investigation is warranted and to what extent.

Additional Sampling and Analysis

If explosives are detected at concentrations that exceed clean-closure standards (soil screening or site-specific risk-based levels), additional samples will be collected to more completely characterize the nature and extent of the contamination. Samples will be taken at a greater depth than the initial sampling locations to define the vertical extent of contamination. Samples will also be taken at a greater distance from the units to determine the horizontal extent of contamination. If the analysis indicates that the concentrations of all explosive constituents are equal to or less than soil screening levels or site-specific risk-based levels, no further sampling or soil removal or remediation will be necessary.

Procedures/Methods to Perform Decontamination

Any contaminated soil at the Burn Pan Unit exceeding clean-closure levels will be excavated. Soils will be removed in layers up to 2 feet in thickness using backhoes, bulldozers, or other excavation equipment. After a layer of contaminated soil (compacted clay or native soil) is removed, sampling and analysis will be conducted to determine whether cleanup goals have been attained. If goals are not attained, additional layers of compacted clay/native soil will be removed until closure goals are attained or the unit is closed as a landfill. If in-situ treatment is considered to be an appropriate alternative to excavation, the closure plan will be revised and submitted to the Tennessee Department of Environmental Conservation (TDEC) in accordance with (Closure Plan Amendment). Contaminated compacted clay/native soils will be removed from the unit and brought to a temporary staging area located within or adjacent to the Burn Pan Unit. At the staging area, the contaminated compacted clay/native soils will be placed in U.S. Department of Transportation (DOT) approved drums, roll-off boxes, or other suitable containers for offsite transport. The staging area will consist of a graded, compacted, earthen foundation surrounded by earthen berms or temporary concrete berms. The foundation and berms will be overlain by a 30-mm thickness (minimum) liner of sufficient durability to withstand sorting activities. Plywood or a similar material will be laid on top of the liner to prevent tearing. The staging area will be covered in a manner that prevents accumulation of precipitation while allowing work to continue. Full drums of contaminated material will be temporarily stored at the staging area and away from sorting activities to prevent contamination by loose material. In addition, the outside of all containers will be decontaminated prior to leaving the area if they come into contact with contaminated materials. The disposition of any excavated material (compacted clay or native soil) will depend on whether it is a TC hazardous waste. Representative composite samples of the excavated compacted clay or native soil will be obtained and tested for the TC. The TC parameters that will be tested will be explosive TC constituents 2,4-dinitrotoluene, and nitrobenzene. Excavated soils failing the TC test will be managed as hazardous waste and disposed of at an offsite hazardous waste landfill. Excavated (compacted clay or native) soils that are not TC will be managed as solid waste and placed in a solid waste landfill. All decontamination liquids will be consolidated into appropriate leakproof shipping containers. A representative sample will be collected and analyzed for the same TC constituents as soil. If determined to be hazardous, all containers will be labeled and moved to a temporary storage area. If determined to be nonhazardous, the decontamination liquids will be discharged to the HSAAP wastewater treatment system.

Equipment Decontamination

Decontamination Pad

A decontamination pad will be constructed. The decontamination pad will be constructed on a graded and compacted earthen foundation. It will be surrounded by berms. The berms and the pad will be overlain by a liner (at least 30 millimeters [mm] thick) so that decontamination fluids are retained. The liner will be protected from tearing by material such as sand or plywood. Ramps will be positioned at the entrance and exit of the pad to allow vehicles to pass over the berms. The pad will be sloped so that decontamination fluid will flow to a low point and be collected. After decontamination activities are finished, the decontamination pad liner will be steam cleaned and the rinsate collected and containerized. The liner will then be disposed of as a solid waste.

Personnel Protective Equipment (PPE)

Any contamination on PPE is expected to consist of solids. All disposable PPE, such as clothing, gloves, and expendable protective gear, will be cleaned on the decontamination pad to remove any solid material adhering to the PPE. The PPE will then be placed into a container and disposed of as a nonhazardous solid waste into HSAAP's onsite solid waste landfill.

Small Excavation Equipment Decontamination

Small excavation equipment, such as shovels and rakes, will be decontaminated by removal of solids by use of a brush followed by steam cleaning with a high-pressure washer.

Large Excavation Equipment Decontamination

Vehicles and heavy equipment, such as trucks, backhoes, and bulldozers, will be decontaminated by steam cleaning with a high-pressure washer on the decontamination pad. All heavy equipment will be decontaminated before leaving the site.

Sampling Equipment Decontamination

Sampling equipment will be decontaminated as follows:

- A detergent scrub with brushes using Alconox or trisodium phosphate
- Clean water rinse
- Two isopropanol (nanograde) rinses
- Air dry
- Analyte-free water rinse

Management of Decontamination Wastes

All decontamination wastes, both liquids and solids, will be collected. Liquids will be collected at a low point on the decontamination pad. Both liquid and solid waste will be placed into containers meeting DOT requirements. The containerized decontamination wastes will be tested for the TC. Any decontamination wastes failing the TC will be handled as hazardous waste. Decontamination wastes passing the TC will be handled as nonhazardous wastes.

Additional Closure Activities

The ignition system at the Burn Pan Unit will be made inoperative and above-ground portions removed. The drainage system will be flushed to remove any solids to the HSAAP wastewater treatment system. Dust may be generated during excavation and material-handling activities. Therefore, dust control procedures, such as wetting the material to be excavated, will be implemented if this is a problem.

Procedures to Evaluate Effectiveness of Decontamination

The effectiveness of the decontamination procedures for the surrounding area will be determined by collecting soil samples, both vertically and laterally at the edges of the excavation area. Each distinct excavated area will be sampled. Composite samples will be taken from the middle of the excavation pit and from the four walls. One duplicate composite will be obtained. The composite samples will consist of four grab samples. Each grab sample will be split in half with one half being retained and the other half used to form the composite sample. The composite samples will be analyzed for whatever constituent(s) necessitated the initial excavation. The laboratory will be requested to analyze the samples on a quickturnaround basis. If each of the composite samples has concentrations of the constituents below clean-closure levels for an excavated area, then clean closure will be considered attained for that area. The horizontal extent of contamination will not have been identified if one or more of the composite samples taken at the edge of the excavation walls are above clean closure levels. Each of the grab samples comprising the composite sample exceeding clean-closure levels will then be analyzed, for the contaminants necessitating the excavation, to better delineate the horizontal extent of contamination. The results of the analysis of the grab samples will be used to determine the locations for additional sampling beyond the edge of the original excavation. Samples will be taken of 5- and 10-foot distances from the edges of the excavation area where clean-closure levels were still exceeded. The vertical extent of contamination will not have been identified if the composite sample of the bottom of the excavation is above clean-closure levels for the contaminant necessitating the excavation. If the vertical extent of contamination is not identified, then as much as 2 feet of soil will be removed and another composite sample taken. The above process will be repeated until sampling results show that clean-closure has been obtained in both the horizontal and vertical directions for the area. If a determination is made that clean-closure cannot be attained, the contingent closure and post-closure plan will be implemented for the portion of the Burn Pan Unit that cannot be clean-closed. After all decontamination steps have been completed, the site will be regraded consistent with the natural topography. The topsoil will be re-seeded with native grasses.

Analysis Procedures

Analytical procedures for analyzing the compacted clay/native soil at the Burn Pan Unit during closure are shown on Table 6.1-1. These analytical procedures are from SW-846, 3rd Edition (or latest edition). Background samples are normally collected only for metals. Explosives are not naturally occurring. Metals are not identified as hazardous constituents in the materials treated in the Burn Pan Unit and will not be analyzed during closure activities. Therefore, background samples will not be collected.

Schedule for Closure

Year of Closure

The expected year of closure is 2035.

Closure Schedule

The Burn Pan Unit will be closed in accordance with the schedule in Table 6.1-2, once the decision for closure has been made and funding has been provided.

Extensions of Closure Time

If unforeseen problems are encountered during closure of any of the storage facilities, an extension of the required closure time (180 days) may be necessary to allow sufficient time to conduct sampling events and to receive and interpret sampling data. Demonstrations required for an extension of closure time will be made in accordance with the requirements of and within the time required in TN Rule 1200-01-11-.06(7).

MAF/12/10/2010