FACT SHEET

INTENT TO MODIFY HOLSTON ARMY AMMUNITION PLANT'S ORDER AND TO APPROVE A CORRECTIVE ACTION REMEDY

Facility Name: Holston Army Ammunition Plant (HSAAP)

Location: 4509 West Stone Drive, Kingsport, Tennessee 37660

Order Number: 03-HCA002

EPA ID Number: TN5 21 002 0421

Respondent: Holston Army Ammunition Plant (HSAAP)

Owner: United States Department of Defense
Department of Army

Regulated Units: The corrective action order only addresses remedial action at facility solid waste management units (SWMUs) and areas of concern (AOCs). Any corrective action requirements for the Burning Pans, SWMU 45, are regulated by the Hazardous Waste Management Open Burn Permit, TNHW-148, issued March 31, 2011.

Facility Contact: Dennis Mayton, Restoration Program Manager
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Comment Period: **Begins: September 26, 2012**
Ends: 4:30 p.m., Monday, November 12, 2012

PURPOSE

This fact sheet is prepared pursuant to Tennessee Rule 0400-12-01-.07(7)(d) for the draft order modification developed by the Tennessee Department of Environment and Conservation's (TDEC) Division of Solid Waste Management (DSWM). The purpose of this modification process is to afford any interested persons the opportunity to review and comment on the selected final remedies and to evaluate the ability of the Respondent to apply the applicable hazardous waste management (corrective action) requirements. The proposal is for the order modification to be issued under the authority of the Tennessee Hazardous Waste Management Act of 1977, as amended, Tennessee Code Annotated, Section 68-212-101 et seq., and Rule Chapter 0400-12-01, Hazardous Waste Management. The order modification is prepared in accordance with the provisions of Rule 0400-12-01-.07.

FACILITY DESCRIPTION

Holston Army Ammunition Plant (HSAAP - Respondent) is located at 4509 West Stone Drive, Kingsport, Tennessee (Figure 1). HSAAP consists of two plant areas referred to as Area A and Area B (Figure 2). Area A is located within the City of Kingsport in Sullivan County, Tennessee, on State Route 93. Area B is located in Hawkins County about 4 miles west of downtown Kingsport, on U.S. Route 11W. Area A and Area B are linked by a fenced interplant railroad that is approximately 3.7 miles long (Figure 2).

Area A, the smaller of the two areas, is approximately 112 acres and is located within a heavily industrialized area of Kingsport adjacent to several private sector commercial industrial facilities. Area B is approximately 5,913 acres and contains the explosives production area, where explosive manufacturing and packaging takes place. During most of the history of HSAAP, the region around Area B has been residential and agricultural, along with limited commercial activities. Since the early 1980s, residential and commercial developments have increased significantly around Area B, particularly around West Stone Drive. Residential developments abut the northeast and northwest plant boundaries of Area B. Highway 11W separates Area B from the majority of residential and commercial areas to the north and northwest. Residential areas to the south are separated from Area B by sections of Holston River Mountain, Bays Mountain, and Bays Mountain Park.

ORDER HISTORY

Under the authority of the Tennessee Hazardous Waste Management Program, the post-closure and corrective action regulatory history for Holston Army Ammunition Plant is chronologically summarized as follows:

1. The Former Solvent Burn Tank Unit (Unit) was operated from the early 1960s to 1983. The Unit, also identified as Solid Waste Management Unit (SWMU) 50, was comprised of two open tanks used for burning explosive-contaminated, nonhalogenated spent solvents and waste propyl formate solution from the azeotropic distillation of acetic acid. Batches of spent solvents were placed in the open tanks, ignited, and allowed to completely burn.

2. In 1982, the first tank in the Unit was excavated and the resulting pit was backfilled. In 1984, the second tank in the Unit was excavated and the resulting pit was backfilled. In 1984, the Division of Solid Waste Management (DSWM) approved the Closure Plan for clean closure of the Unit.

3. In 1991, USEPA notified HSAAP that they were subject to clean closure equivalency standards.

4. In 1993, a study was conducted by HSAAP to satisfy the clean closure equivalency requirements. The study indicated groundwater contamination at the Unit.

5. From late 1995 to early 1997, HSAAP conducted soil and groundwater assessments at the Unit. A groundwater monitoring system was installed to evaluate the extent of groundwater contamination.

6. In September 1997, HSAAP submitted a closure certification and a report outlining the results of its soil investigation. As a result of the investigation HSAAP was not required to remove any additional soils.

7. On March 31, 1999, the DSWM issued HSAAP a Post-Closure Corrective Action Order that required a Corrective Action Plan (CAP) for the Unit. The DSWM did not approve the CAP submitted by the Respondent.

8. On March 26, 2002, HSAAP requested a modification from the DSWM to deviate from the corrective action process as described in Section II of the Attachment to the Order by participating in the Facility Action Plan (FAP) process. The DSWM approved HSAAP's request.

9. On January 27, 2003, HSAAP requested a modification to the Post-Closure Corrective Action Order to address groundwater monitoring and any required corrective action at the Unit under the Order's site-wide groundwater corrective action program. The Unit, which has no contaminated soils, would have any groundwater monitoring or groundwater corrective action addressed under the corrective action requirements for the entire facility. The DSWM approved HSAAP's request.

10. As a result of the, HSAAP's modification requests and the DSWM's approvals noted in items 8 and 9 above, the Post-Closure Corrective Action Order issued to the Respondent on March 31, 1999 was replaced in its entirety by issuing a new order.

11. On May 16, 2003, the State of Tennessee Department of Environment and Conservation (TDEC) issued Corrective Action Order (Order) Case No. 03-HCA002 to HSAAP. The Order listed Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) that required Confirmatory Sampling (CS) or Resource Conservation and Recovery Act (RCRA) Facility Investigations (RFIs).

12. In compliance with the conditions of the new Corrective Action Order, HSAAP completed CSs, RFIs, and Interim Measures (IMs) at the facility SWMUs and AOCs. The result of those activities is reflected in the proposed status for each SWMU and AOC as listed in the tables in this fact sheet.

13. To finalize the remedies for the SWMUs and AOCs and in accordance with the procedures specified in the current order, HSAAP requested that the Corrective Action Order be modified to reflect the current status of the SWMUs and AOCs. The request followed a public meeting conducted by the facility on April 12, 2010, at Holston Business Development Center, 2005 Venture Park, Kingsport, TN. The purpose of the meeting was to inform the community of HSAAP's planned modification request to incorporate the proposed final remedies of various SWMUs and AOCs into their order. The public notice of the meeting included the establishment of a 60-day comment period (March 12 through May 14, 2010). At the meeting, HSAAP performed a slide presentation about the facility's corrective action order and remedial actions to date, and answered a few questions. No comments were received at the meeting or during the 60-day comment period.

14. To complete the modification request, the DSWM has public noticed the request, including drafting the modification with the necessary supporting data and documentation, enabling the public to have the opportunity to review and comment on the remedies.

PROPOSED ORDER MODIFICATION

The purpose of the proposed Class 3 Order Modification is to define the final corrective action requirements for Holston Army Ammunition Plant's solid waste management units (SWMUs) and areas of concern (AOCs).

The tables included with this fact sheet provide the requirements for all the SWMUs and AOCs at HSAAP. Figures 3 through 6 depict the locations of those units. Specifically, in the draft order modification, there are 84 SWMUs and 13 AOCs that have been determined to require no further action (NFA) under the corrective action requirements of the order. These units are described in Tables 1 and 2. The seven NFA SWMUs detailed in Table 2 are regulated by alternative authorities. The 24 SWMUs and two AOCs that are proposed in the draft as requiring implementation of a corrective action remedy are described in Tables 3 and 4. The five SWMUs in Table 4 are still active units. Additional investigation and other possible remedial actions may be necessary for the units listed in Table 4. Any further actions shall be addressed at the time of plant or unit closure.

At present, there are no SWMUs or AOCs that require confirmatory sampling, a RCRA facility investigation, interim measures or a corrective measures study under the corrective action requirements of the draft order modification.

A Statement of Basis, which provides justification for the selected remedies is also being public noticed. The Statement of Basis explains the basis and recommendations for final remedy selection and remedy implementation. It provides summaries of the site's hydrogeologic and contaminant investigations, completed and ongoing interim remedial actions, details of the selected final remedies, and a list of reference documents for further information.

CORRECTIVE ACTION REQUIREMENTS

The draft order modification describes how Holston Army Ammunition Plant (HSAAP) shall implement the selected corrective action remedies at their facility. The selected final remedies have been determined by the DSWM to be adequately protective of human health and the environment.

As contaminants remain in soil and groundwater, the proposed order modification requires HSAAP to maintain site controls. Included are site security measures, institutional controls, groundwater monitoring and inspections. Controls are necessary to protect human health and the environment by preventing exposure to the materials contaminated with hazardous constituents. This will be accomplished through site access controls and enforcement of other administrative measures. Inspections will verify that these controls are maintained and that the installed cap/cover systems remain intact. Groundwater monitoring will identify changes in groundwater quality at or near prior release locations and to ensure that migration of contaminants will not impact the water quality of the Holston River. Required surface water monitoring will verify that the river is not being impacted by releases from HSAAP.

COMMENTS

Copies of draft modification, the fact sheet and the statement of basis are available for public inspection at the Church Hill Public Library, 412 East Main Blvd., Church Hill, TN 37600 (423-357-4591) and at the Kingsport Public Library, 400 Broad Street, Kingsport, TN 37600 (423-229-9489). These materials are also available for public inspection during normal business hours, 8:00 a.m. to 4:30 p.m., Monday through Friday, except legal holidays, at the TDEC Johnson City Environmental Field Office, Public Access Area, 2305 Silverdale Road, Johnson City, TN 37601 (423-854-5400) and at the TDEC Division of Solid Waste Management's Central Office, 5th Floor, L & C Tower, 401 Church Street, Nashville, TN 37243-1535 (615-532-0780).

Any interested person may submit written comments on the DSWM's proposal or request a public hearing by contacting: Roger Donovan, Corrective Action Section, Division of Solid Waste Management, TDEC, 5th Floor, L & C Tower, 401 Church Street, Nashville, TN 37243-1535 (615-532-0864) or e-mail to roger.donovan@tn.gov. **The comments or request for a public hearing,** under Rule 0400-12-01-.07(7)(f), **must be received by 4:30 p.m., Monday, November 12, 2012**, to assure consideration. A request for a hearing requires a significant degree of public interest, shall be in writing, including the contact information of the requestor, and shall state the nature of the issues to be raised at the hearing. After considering all public comments received, the DSWM Director will issue a final permit decision and a Response to Comments.

The Tennessee Department of Environment and Conservation is an Equal Employment Opportunity/Affirmative Action (EEO/AA) employer. The department does not unlawfully discriminate on any basis prohibited by applicable law in any of its programs, services or activities.

EEO/AA inquiries or complaints may be directed to the EEO/AA Coordinator, Office of General Counsel, at 1-888-867-7455. ADAAA inquiries or complaints should be directed to the ADAAA Coordinator, HR Division, at 1-866-253-5827. Hearing impaired callers may use the Tennessee Relay Service (1-800-848-0298).

Persons who wish to be on DSWM's mailing list should request a Mailing List Request form by calling or writing: Public Participation Officer, Division of Solid Waste Management, TDEC, 5th Floor, L & C Tower, 401 Church St., Nashville, TN 37243-1535 (615-532-0798) or e-mail solid.waste@tn.gov.

FACT SHEET TABLES

TABLE 1: PROPOSED NO FURTHER ACTION
SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

Table 1 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order:				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**NFA Documentation**
1	Industrial Sewer	Unit consists of sumps, drains and underground/aboveground pipes located throughout Areas A and B.	1942 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
2	Surface Drainage Ditches	Unit consists of unlined drainage ditches throughout Areas A and B that discharge surface runoff to the Holston River.	1942 – Present	Confirmatory Sampling determined no releases; NFA approval DSWM – 8/13/04
5	Acetic Anhydride Sludge Tanks	The tanks store sludge generated by base heater that refines acetic anhydride in Building 6.	1943 – Present	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
6	Ball Mill Solids Pit and Dumpster	Unit receives washdown water from acetic anhydride operations. Solids settle to bottom, liquid is discharged to Industrial Wastewater Treatment Plant (IWTP).	1942 – Present	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
7	Propyl Formate Tanks	Unit consists of three banded steel tanks with capacities of 2,000 to 2,500 gallons.	1972 – 1995	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
8	Area A Industrial Boilers	Unit consists of 8 boilers that burn coal, coal tar, and propyl formate wastes (D001) for heat recovery.	1940s – Present	Clean Closed; Confirmation of clean closure DSWM – 7/16/99
9	Area A Fly Ash Loading Station	Unit consists of one uncurbed concrete pad and one smaller pad beneath the fly ash hoppers of Building 8 in Area A.	1942 – 1990s	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
10	Rail Car Loading Area	Unit is part of the facility railroad that links Areas A and B.	1942 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
11	Area A Parts Cleaners	Unit consists of covered metal containers which hold solvents for cleaning metal parts.	1942 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
12	Area A Spill Pond	Unit was once part of the Area A Aeration Basin. The unit has managed acetic acid and acetic anhydride waste waters.	1983 – 1990s	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM– 2/14/00
13	Area A Aeration Basin	This clay-lined basin is also referred to as the Area A Industrial Waste Water/ Equalization Lagoon or Treatment Lagoon. The unit managed acetic acid and acetic anhydride waste waters.	1975 – 1990s	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00

Table 1 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order (continued):				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**NFA Documentation**
15	Coal Tar Landfill 2	Unit is a ¼-acre unlined landfill that managed coal tar and fly ash.	Unknown	Interim Measures Report; NFA Approval DSWM – 10/23/07
16	Coal Tar Container Storage Area	Unit is an interior storage area in Building 13 (Area A) used to store coal tar drums.	Unknown – 1990s	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
30	Former Nitric Acid Equalization Basin	This unlined unit managed industrial wastewaters from processes conducted in the Nitric Acid Manufacturing Area.	1978 – 1984	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
31	Existing Nitric Acid Equalization Basin	Unit receives industrial wastewater from the Nitric Acid Manufacturing Area and the Nitric Acid Spill Pond. The waste is neutralized and discharged to the IWTP.	1985 – Present	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
32	Explosive Settling Basins	Unit acted as settling basins for wastewater particulate matter coming from the manufacturing area.	1983 – 1989	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
33	Neutralization Basins	These below-grade basins manage industrial wastewaters generated from processes in the Nitric Acid Manufacturing Area.	1978 – Present	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
34	Area B Industrial Boilers	Unit consists of nine boilers which generate fly ash.	1942 – Present	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
35	Unlined Spill Pond	Unit managed industrial wastewater from the Industrial Sewer (SWMU 1).	1983 – 1986	Additional Confirm. Sampling Report determined no releases; NFA approval DSWM – 6/5/08
36	Lined Spill Pond	Unit received industrial wastewaters from acetic acid recovery processes conducted in Area B.	1987 – 1988	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
40	Sodium Nitrate Pond 3	This unlined unit received waste waters from the B-Line Production Areas.	1970 – 1987	No indication of release of RCRA hazardous waste/constituent. Closed by TDEC Division of Water Pollution Control in 1980s.
41	Sodium Nitrate Pond 4	This unlined unit received waste waters from the B-Line Production Areas.	1973 – 1987	Did not contain hazardous constituents. Closed by TDEC Division of Water Pollution Control in 1980s.
42	A – 1 Equalization Basin	Unit managed wastewaters containing ammonia and dimethylamines.	1979 – 1994	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00

Table 1 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order (continued):				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**NFA Documentation**
43	Burning Ground	Unit regulated by Hazardous Waste Management Permit TNHW-148. Unit receives explosive-contaminated wastes.	1940s – Present	RFI Report; NFA approval DSWM – 12/18/08
46	Burning Cages (2)	These two cages are located in the Burning Ground Area (SWMU 43).	1940s – Present	RFI Report; NFA approval DSWM – 12/18/08
48	Sludge Dewatering Station	Unit is located in the Burning Ground Area (SWMU 43). It received explosive contaminated wastes for dewatering.	Mid 1940s – 1981	RFI Report; NFA approval DSWM – 12/18/08
49	Vehicle Wash Pad at Burning Ground	Unit is located in the Burning Ground. Area (SWMU 43). This unit managed wash water that may have contained oil, grease, gasoline and explosives. The pad drains to IWTP.	About 1983 – Present	RFI Report; NFA approval DSWM – 12/18/08
50	Former Solvent Burn Tank	Unit is located in the Burning Ground Area (SWMU 43). It was utilized for the open burning of explosive contaminated, spent non-halogenated solvents and oils.	1980 – 1984	RCRA unit NFA under PCCAO dated 3/31/99. Groundwater included in AOC-GW.
51	Vehicle Wash Pad Outside Bldg. 105	Unit manages wash water that may have contained oil, grease, gasoline and explosive residues.	1980 – Present	Confirmatory sampling determined no releases; NFA approval DSWM – 10/10/05
52	Vehicle Wash Pad inside Bldg. 105	Unit manages wash water that may have contained oil, grease, gasoline and explosive residues.	1942 – Present	Confirmatory sampling determined no releases; NFA approval DSWM – 10/10/05
53	WWII Vehicle Wash Pad	Unit managed wash water that may have contained oil, grease, gasoline, fly ash, metal glass and explosive residues.	1940s – 1990s	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
54	Vehicle Wash Pad at Bldg. 556	Unit manages wash water that may contain oil, grease, gasoline, and explosive residues.	App. 1960 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
55	Steam Cleaning Pad at Bldg. 556	Unit is used for steam cleaning heavy equipment. The unit manages wash water that may contain oil, grease, gasoline and explosive residues.	1942 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
57	Oily Rag Satellite Accumulation Areas (SAAs)	These SAAs manage oily rags that contain petroleum hydrocarbons.	1940s – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
58	Waste Oil SAAs	These SAAs manage waste oils that contain petroleum hydrocarbons.	1940s – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00

Table 1 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order (continued):				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**NFA Documentation**
59	Used Tire SAA	Unit is used to store tires prior to their disposal.	Unknown	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
60	Waste Oil Drainage Pad	Unit manages waste oils and oil contaminated materials.	1960 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
61	Oil/Water Separator	Unit manages oily wastewaters.	1960 - Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
62	Area B Parts Cleaners	Unit manages waste oil, grease removed from machine parts, spent Stoddard solvent, mineral spirits and varsol.	1942 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
63	Laboratory Explosives SAA	Unit manages waste explosives and explosive-contaminated material collected in the catch basin behind the laboratory building (Building 8).	Unknown	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
64	Paint Sludges SAA	Unit managed paint sludges or still bottoms resulting from the recovery of thinners in a distillation unit at the Paint Shop.	1988 – 1990s	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
65	Respirator Cartridge SAA	Unit manages spent respirator filters that had failed TCLP testing for cadmium.	1989 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
66	Former Paint Waste SAA	Unit managed paint wastes from Area B paint shop.	1988 – 1989	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
67	Used Battery SAAs	Unit manages used batteries generated by vehicles and equipment.	Unknown	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
68	Sulfuric Acid SAA	Unit is used to collect spent sulfuric acid from used batteries that are drained prior to disposal.	Unknown	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
69	Scrap Metal Yard	Unit managed scrap metal and equipment.	Mid 1940s – 1990s	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
70	Production Yards	These units are located throughout the facility. The units managed potentially contaminated equipment, scrap metal, decontaminated materials, and materials waiting reuse.	1942 – 1990s	*Yards 1-5, 8-11* – Confirmatory Sampling (CS) Report determined no releases; NFA approval DSWM – 6/19/00. *Yards 6-7* – CS Report determined no releases; NFA approval DSWM – 6/5/08. *Yard 12* – Interim Measures Report; NFA approval DSWM – 10/11/05.

Table 1 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order (continued):				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**NFA Documentation**
71	PCB Storage Area	Unit manages the storage of PCB transformers and PCB-contaminated materials.	1981 – Present	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
72	Former Battery Storage Area	Unit managed the storage of used vehicle batteries prior to disposal.	1960s – 1988	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
73	Waste Fuel Oil Drum Storage Area	Unit managed waste fuel oil from Sanitary Wastewater Treatment Facility.	1991	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
74	Ball Field Staging Area	Unit managed soil contaminated with petroleum hydrocarbons.	1989 – 1990s	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
75	T-1 Bldg. Staging Area	Unit managed coal tar/soil mixture, a PCB-oil transformer, and calcium chloride.	1990s	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
76	Dumpsters	Unit received various non-hazardous waste and refuse such as paper, glass, metal, and incinerator ash and fly ash prior to disposal.	1942 – 1990s	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
79	Waste Oil UST at Bldg. 105	Unit is a 2,000-gallon carbon steel Underground Storage Tank (UST) that was used to store waste motor, lubricating oil, and non-PCB transformer oil.	1968 – 1994	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
80	Waste Oil UST at Bldg. 556	Unit consists of a 2,500-gallon steel UST that stored spent mineral spirits, Stoddard chemical and varsol from parts cleaners.	1983 – 1994	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
81	Waste Oil UST at Bldg. 302	Unit consisted of one 130-gallon UST which received waste oil that had been captured in the oil room sump. The building and UST have been removed.	1970 – 1994	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
82	Area B Fly Ash Loading Station	Unit consists of a paved loading area for the transfer of fly ash.	About 1957 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
83	Decontami-nation Ovens	These ovens manage metal parts and scrap metal that have been contaminated with explosive residues.	1961 – Present	Interim Measures Report; NFA approval DSWM – 10/13/05
84	Incinerators	Unit consists of incinerators used to thermally remove non-explosive waste materials from the plant site such as paper, cardboard, wooden boxes, plastic bags, oily rags, rubbish, foliage, and garbage.	1974 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00

Table 1 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order (continued):				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**NFA Documentation**
85	Incinerator Staging Area	Unit manages the storage of non-hazardous, non-explosive, combustible garbage prior to incineration.	1974 – Present	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
89	Industrial Waste Water Treatment Facility	Unit treats the wastewater from the facility.	1983 – Present	NFA per EPA RFA Report (A. T. Kearny) 8/30/91
90	Area A Former Coal Piles	Unit is a grass covered area that stored coal. It also managed ball mill solids.	1942 – 1989	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
91	Sewage Treatment Plant	Unit is a 758,000-gallon per day trickling filter waste-water treatment facility.	1960 – Present	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
93	Sandblasting Area 1	Unit had been used to perform general sandblasting.	1990 – 1992	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
94	Sandblasting Area 2	Unit had been used to perform general sandblasting.	1980s – 1990	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
95	Sandblasting Area 3	Unit was used to perform general sandblasting. The area is approximately 200 feet long by 200 feet wide. The area was once gravel but is now covered by an asphalt lot.	Unknown	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
97	Coal Tar Contamination Along the Rail Corridor	Unit is a coal tar disposal area along the rail corridor between Areas A and B.	Unknown	Interim Measures Report; NFA approval DSWM – 2/23/06
98	Coal Tar Contamination South of SWMU 17	Unit is a coal tar disposal area in Area B.	Unknown	Interim Measures Report; NFA approval DSWM – 3/14/06
99	Landfill	Unit is a possible landfill north of Building C-6.	Unknown	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
100	Possible Drum Rinsing Area near Bldg. R-6	Unit is a possible drum rinsing area near Building R-6. Area is presently a parking lot. This unit had been used to perform general sandblasting.	Unknown	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
101	Bldg. 105 Oil/ Water Separator and Associated Drain Pad	Unit was reportedly used for temporary storage of new oil drums. Unit had been used to perform general sandblasting.	Unknown	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08

Table 1 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order (continued):				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**NFA Documentation**
102	Former Penn–Dixie Sedimentation Pond	This surface impoundment is a natural low area approximately three acres. Runoff and leachate from a Penn-Dixie cement kiln dust waste pile was managed at this unit. This unit had been used to perform general sandblasting.	Unknown	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
104	Firing Range West of Building 134	Firing range used in the mid-1960s.	1960s	RFI/Interim Measures Report; NFA approval DSWM – 4/28/06
105	Firing Range at the Water Reservoir	Small arms practice range.	1984 – ?	RFI/Interim Measures Report; NFA approval DSWM – 4/28/06
106	Firing Range at Building 234	Area is the site of a former firing range. Range likely destroyed to construct Building 234.	1967 – 1983	RFI/Interim Measures Report; NFA approval DSWM – 4/28/06
107	Diesel UST at Rail Car Building	Diesel/fuel oil tank at in-plant fueling station which was taken out of service and abandoned in place at an unknown date.	Unknown	Interim Measures Report; NFA approval DSWM – 5/29/08
108	Armed Forces Reserve Center and Maintenance Shop	Area used for disposal of fly-ash type material.	Unknown	SWMU Assessment Report determined no releases; NFA approval DSWM – 5/12/09
A	Mad Branch Stream	This stream currently receives the facility's non-contact cooling water from Areas A and waters from the AFG Stream (AOC B).	1942 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
B	AFG Stream	This stream receives non-contact cooling water from Area A.	1942 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
C	UST Gasoline Leak	Unit consisted of a filling station that contained three USTs that held diesel fuel and gasoline for facility vehicles. The tanks went through a UST closure.	1968 – 1994	RFI Addendum Report; NFA approval DSWM – 9/17/07
D	Existing Product USTs	These nineteen USTs managed products.	1942 – 1994	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
E	Removed Product USTs	These eight USTs no longer exist. They managed product materials.	1942 – 1991	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00

Table 1 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order (continued):				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**NFA Documentation**
F	Manganese Ore Piles	Unit consisted of several former and existing manganese ore piles stored directly on the ground.	1955 – 1987	Interim Measures Report; NFA approval DSWM – 3/14/06
G	Arnot Branch	This stream receives non-contact cooling water and surface drainage from the plant.	1942 – Present	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
H	Other Possible Fly Ash Sites	Unit consists of four sites in Area B identified as possible fly ash landfill locations.	Unknown	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
I	Explosive Demonstration Ground	This area is located near the laboratory building. It contains a rectangular concrete pad where small quantities of explosives were detonated for training purposes.	1942 – Present	Interim Measures Report; NFA approval DSWM – 2/23/06
J	Area B Former Coal Pile	Soil and gravel areas that stored coal.	1942 – Present	Confirmatory Sampling Report determined no releases; NFA approval DSWM – 6/5/08
K	PCB Spill Site #2	This is a PCB spill from a transformer that was stored on a concrete pad east of Building 334 in Area B.	1987	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
L	PCB Spill Site #1	This area of contamination was located outside of Building #1 in Area A. The spill was the result of a transformer leak.	1987	Confirmatory Sampling Work Plan determined no releases; NFA approval DSWM – 2/14/00
O	Coal Tar Behind Building 20	Unit is a coal tar site on the west side of Building 20 in Area A.	Unknown	RFI/Interim Measures Report; NFA approval DSWM – 9/28/07

TABLE 2: NO FURTHER ACTION
SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

ALTERNATE REGULATORY PROGRAM

Table 2 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring No Further Action (NFA) under the Corrective Action Order. These Units are Currently Regulated Under Another Program:			
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**
17	Active Sanitary Landfill	Unit is an 8.25-acre unlined landfill that received wastes from throughout the facility. *Regulated by TDEC Johnson City DSWM Field Office - Class II Sanitary Landfill: Permit No. IDL 37-104-0192.*	1983 – 1996
21	Rock Dam Landfill	Unit managed demolition and excavation wastes, scrap metal, wooden debris and domestic refuse. *Regulated by TDEC Johnson City DSWM Field Office. Unit closed – 10/31/83.*	1966 – 1983
22	Active Fly Ash Landfill	Unit is a 5.5-acre unlined landfill that received fly ash. *Regulated by Regulated by TDEC Johnson City DSWM Field Office - Class II fly Ash Landfill – Permit No. IDL 37-104-0062.*	1983 – 1997
23	Former Fly Ash Landfill	Unit is a 7-acre unlined clay capped landfill that received fly ash. *Regulated by TDEC Johnson City DSWM Field Office.*	1977 – 1984
28	Sedimentation Pond for Fly Ash Landfill	Unit manages runoff from the Active Fly Ash Landfill (SWMU 22). *Regulated by TDEC Johnson City DSWM Field Office – Landfill – Permit No. IDL 37-104-0062.*	1983 – Present
45	Burning Pans (4)	Regulated by Hazardous Waste Mgmt Permit TNHW-148. Unit receives explosive-contaminated wastes. (Pans are in Burning Ground Area - SWMU 43)	1984 – Present
92	New Sanitary Landfill	Unit is used to dispose of nonhazardous, nonexplosive, sanitary and inert waste and garbage generated at HSAAP. *Regulated by TDEC Johnson City DSWM Field Office: Permit No. IDL 37-104-0090.*	1997 – Present

TABLE 3: PROPOSED FURTHER ACTION
SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

Table 3 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring Implementation of a Corrective Action Remedy:				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**Remedy**
4	Coal Tar Tanks	Unit consists of two 2,000-gallon aboveground steel tanks that stored coal tar. The tanks have been removed.	1978 – 1994	Institutional Controls and Inspections
14	Coal Tar Landfill 1	Unit is a three-acre unlined landfill that managed coal tar and fly ash.	1948 – 1978	Institutional Controls and Inspections
18	Former Sanitary Landfill	Unit is a 7-acre unlined clay capped landfill that received domestic refuse, light bulbs, bagged asbestos and empty pesticide containers.	1967 – 1984	Institutional Controls and Inspections
19	Construction Debris Landfill	Unit has managed construction debris as well as runoff from the Active Sanitary Landfill.	1984 – 1990s	Institutional Controls and Inspections
20	Area B Rock Quarry Landfill	Unit managed light metal, cinders, fly ash, fiberglass insulation, concrete, rubber, non-salable metal, automobile batteries and approximately six cubic yards of explosive contaminated concrete.	1940 – 1983	Institutional Controls and Inspections
25	Area B Tar Burial Site	Unit managed coal tar and fly ash.	1978 – 1980	Institutional Controls and Inspections
26	WWII Coal Tar Site	Unit managed coal tar and fly ash.	Early 1940s	Institutional Controls and Inspections
29	Former Sedimentation Pond for Sanitary Landfill	Unit managed runoff from the Active Sanitary Landfill (SWMU 17).	1983 – 1984	Institutional Controls and Inspections
38	Sodium Nitrate Pond 1	Unlined unit received waste waters from the B-Line Production Areas.	1969 – 1972	Institutional Controls and Inspections
39	Sodium Nitrate Pond 2	Unlined unit received waste waters from the B-Line Production Areas.	1969 – 1972	Institutional Controls and Inspections
44	Former Burning Pads (2)	These two pads are located in the Burning Ground Area (SWMU 43).	Mid 1940s – 1984	Institutional Controls and Inspections
Note: Institutional controls include access restrictions, signage, excavation restrictions, and annual perimeter fence and land use control inspections.				

Table 3 - List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring Implementation of a Corrective Action Remedy:				
SWMU/ AOC	**SWMU/AOC Name**	**Unit Comment**	**Dates of Operation**	**Remedy**
47	Burning Piles (5)	These piles are located in the Burning Ground Area (SWMU 43).	Mid 1940s – Present	Institutional Controls and Inspections
77	Pesticide Rinsate UST 148 – 1	Unit consisted of one 500-gallon pre-filter tank (UST) which received pesticide rinsate from pesticide spraying operations. The tank has been removed.	App. 1970s – 2004	Institutional Controls and Inspections
78	Pesticide Rinsate UST 148 – 2	Unit consisted of one 130-gallon septic tank (UST) which received pesticide rinsate from pesticide spraying operations. The tank has been removed.	App. 1970s – 2004	Institutional Controls and Inspections
86	Pesticide Drain Field	Unit managed pesticide rinsate. The drain field has been removed.	1960s – 2004	Institutional Controls and Inspections
87	Active Pesticide Wash-Down Area	Unit consists of a concrete wash pad with a three-foot concrete sump in the center. The unit is curbed on three sides. The unit managed pesticide rinsate.	1960s – 1986	Institutional Controls and Inspections
88	WWII Pesticide Wash-Down Area	Unit managed pesticide rinsate from tractors and spraying equipment.	1942 – 1970s	Institutional Controls and Inspections
96	Gas Producer Coal Tar Storage Tanks	Unit managed coal tar generated during production of coal gas in Building 10. Evidence of coal tar was reported during a pit excavation.	1940s – 1993	Institutional Controls and Inspections
103	Coal Tar Site, Ditch behind Gas Producer Building	Unit managed coal tar generated during production of coal gas in Building 10. Evidence of coal tar was reported during a pit excavation. The SWMU is the end of a ditch that carried discharge from Gas Producer Building.	1942 – 1994	Institutional Controls and Inspections
AOC N	Hydraulic Fluid Leak, Elevator at Building G-2	This was site of hydraulic fluid leak at the elevator building associated with Building G-2	1940s – 1970s	Institutional Controls and Inspections
AOC GW	Site-Wide Groundwater	Unit addresses groundwater contamination at Areas A & B.	Unknown	Monitoring, Reporting, and Well Inspections
Note: Institutional controls include access restrictions, signage, excavation restrictions, and annual perimeter fence and land use control inspections.				

TABLE 4: PROPOSED FURTHER ACTION
SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

CURRENTLY ACTIVE UNITS

Table 4 - List of Active Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring Implementation of a Corrective Action Remedy:

SWMU/ AOC	SWMU/AOC Name	Unit Comment	Dates of Operation	Remedy
3	Catch Basins	Catch basins in Areas A and B which collect solids; most associated with explosive manufacturing buildings.	1942 – Present	Institutional Controls and Inspections
24	Bldg. 200 Coal Tar and Fly Ash Landfill	This unit managed fly ash, coal tar and possibly hexamine.	1960s	Institutional Controls and Inspections
27	Sedimentation Pond for Coal Pile	This unit manages runoff from the existing Coal Pile (SWMU 56)	1989 – Present	Institutional Controls and Inspections
37	Nitric Acid Spill Pond	This unlined unit receives overflows from the Nitric Acid Production.	1940s – Present	Institutional Controls and Inspections
56	Existing Coal Pile	This unit stores coal directly on the ground.	1989 – Present	Institutional Controls and Inspections

Note: Institutional controls include access restrictions, signage, excavation restrictions, and annual perimeter fence and land use control inspections.