



**Bureau of Environmental Remediation  
Federal Facilities Unit**  
1000 SW Jackson, Suite 410  
Topeka, Kansas 66612

**STATEMENT OF BASIS  
January 20, 2022**

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**Former Sunflower Army Ammunition Plant**

KDHE Project Code #: C4-046-71090

EPA ID # KS3213820878

**Area of Concern 22 - Old Reclamation Yard**

DeSoto, Johnson County Kansas

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<b>Facility/Unit Type:</b>	Disposal and reclamation of metal, and assorted construction debris
<b>Contaminants:</b>	Arsenic, benzo(a)pyrene, cadmium, chromium, copper, lead, mercury, polychlorinated biphenyls (PCBs)
<b>Affected Media:</b>	Surface and subsurface soils
<b>Proposed Remedy:</b>	Excavation and removal of soils NFA Surface water and groundwater

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**INTRODUCTION**

This Statement of Basis (SB) describes the proposed corrective measures (remedy) for Area of Concern 22 (AOC 22) Old Reclamation Yard, at the Former Sunflower Army Ammunition Plant (SFAAP) in DeSoto, Kansas. The Kansas Department of Health and Environment's (KDHE) authority for requiring corrective action at SFAAP is based upon the KDHE Bureau of Remediation (BER) SFAAP Consent Order No. 05-E-0111 and Kansas Hazardous Waste Statutes: K.S.A. 65-3430 et seq., K.S.A. 65-3452a et seq., and K.A.R. 28-31-4 et seq. Environmental response actions at SFAAP comply with the Defense Environmental Restoration Program (10 U.S.C. §2701). The SFAAP is not on the National Priorities List.

The KDHE is issuing this Statement of Basis as part of its public participation responsibilities under the Resource Conservation Resource Act (RCRA). This document highlights the information that is presented in more detail in the facility Administrative Record (AR). The AR information includes: *Final RCRA Facility Investigation (RFI) Report and Focused Corrective Measures Study (CMS) AOC 22 Old Reclamation Yard Former Sunflower Army Ammunition Plant* (Louis Berger and Burns & McDonnell, 2017), *Final AOC 22 Corrective Measures Implementation (CMI) Completion Report* (CAPE Environmental Management Inc., 2021) and other documents. The public is encouraged to review these documents for a more complete understanding of the environmental

issues at AOC 22 and the corrective actions that are planned. The AR locations are noted at the end of this document.

### **PROPOSED REMEDY**

The proposed remedy for AOC 22 was excavation and off-site disposal for surface soils. Excavation and removal of surface soil off-site to an appropriate landfill or treatment facility was completed as an Interim Corrective Measure (ICM). Site-specific groundwater samples were below the TMCLs for contaminants of concern as was subsurface soil.

Installation of three groundwater monitoring wells was proposed in the *AOC 22 RFI Work Plan* (2016); however, due to field conditions (shallow bedrock and insufficient groundwater in overburden), no groundwater samples were collected as part of the 2008-2017 *RFI* (Louis Berger and Burns and McDonnell 2017). Surface water samples were collected at discharge points from the bedrock and are considered representative of groundwater. Contaminants of Concern (COCs) for the site (arsenic, benzo(a)pyrene, cadmium, hexavalent chromium, copper, lead, mercury, and polychlorinated biphenyls (PCBs)) were tested and were below groundwater TMCLs. Values in the surface water samples were below the soil-to-groundwater pathway and indicated that COCs in the surface soils had not moved into the bedrock.

Groundwater at the site will be evaluated for site-wide COCs during the Army's site-wide assessment of Groundwater Operable Unit No. 4 (GWOU #4). GWOU means a discrete area consisting of a single to many SWMUs and/or AOCs with actual or potential for releases to groundwater, grouped together for purposes of assessment and cleanup. The primary criteria for placement of sites with actual or potential groundwater releases into an operable unit include geographic proximity, similarity of waste characteristics and site type, and the possibility for economies of scale.

### **FACILITY BACKGROUND**

The former SFAAP is located near DeSoto, Kansas, in the northwest corner of Johnson County. It is approximately 30 miles southwest of Kansas City, Kansas, and 16 miles east of Lawrence, Kansas. SFAAP includes approximately 9,065 acres and is surrounded primarily by agricultural land. It is bounded on the east by Spoon and Kill Creeks and on the west by Captain Creek (Figure 1). The plant consisted of production facilities, administrative and storage facilities, powerhouses, landfills, lagoons, ditches, burning grounds, sumps, projectile ranges, and waste treatment facilities. Most of the assets of the plant are no longer in active use. The Site produced nitrocellulose, nitroglycerin, and a variety of propellants from 1942-1971, acids, and nitroguanidine from 1971-1992. The plant was declared excess in 1998 by the Army and sold to Sunflower Redevelopment LLC in 2005. The site is composed of 70 Solid Waste Management Units (SWMUs) where a release of hazardous waste was identified and 27 Areas of Concern (AOCs) where hazardous waste or constituents have been identified but are not linked to a specific solid waste management practice.

### **SUMMARY OF SITE AOC 22**

AOC 22, Old Reclamation Yard, located northeast of Solid Waste Management Unit (SWMU) 56 (Monitoring Well South of Facility 211) and southwest of SWMU 1 (Classification Yard), is

approximately 13 acres. It was originally designated as a reclamation yard based on surface anomalies and temporary access roads identified from 1948 and 1954 aerial photographs and the Army's 1948 Land Use Map (CAPE, 2021). The presence of metal debris, glass, and assorted

construction materials have been documented during previous investigations. However, the exact materials that were staged within AOC 22 are unknown, as well as the type or duration of activities conducted. After several sampling events during previous RFI/CMS (2008-2021, 2017) field activities, the following COCs were detected in surface soil above their target media cleanup levels (TMCLs): Arsenic, benzo(a)pyrene, cadmium, chromium, copper, lead, mercury, and polychlorinated biphenyls (PCBs).

### **SUMMARY OF FACILITY RISKS**

A Relative Risk Site Evaluation (RRSE) was performed in 2003 by Battelle. Eight surface soil samples were collected and analyzed for RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), PCBs, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs). TMCL exceedances of at least one RCRA metal occurred at seven sample locations; exceeding metals included arsenic, cadmium, chromium, lead, and mercury (CAPE, 2021).

Between 2008-2010, RFI field activities were performed and in 2017 an RFI/CMS was finalized by Louis Berger and Burns & McDonnell. The cumulative RFI work consisted of collection of 1,115 in-situ and 180 ex-situ x-ray fluorescence (XRF) readings, 105 surface and 13 subsurface soil samples, and two surface water samples. No COCs were identified in sediment or surface water. However, arsenic, cadmium, chromium, copper, lead, mercury, benzo(a)pyrene, and PCBs exceeded their surface soil TMCLs (CAPE, 2021).

In 2019, pre-design sampling was conducted for the *Corrective Measures Investigation Workplan* (CMI 2019). Twenty-two surface soil samples were collected, analyzed for benzo(a)pyrene, PCBs, and metals (arsenic, cadmium, hexavalent chromium, copper, lead, and mercury) and identified as surface soil COCs. Several subsurface areas had total chromium above the residential TMCL but speciated hexavalent chromium was below the residential TMCL, therefore subsurface chromium was not part of the excavation effort.

### **INTERIM CORRECTIVE MEASURES**

Corrective Measures Investigation (CMI) field activities, including excavation, were completed in 2020. Delineation samples, post-excavation confirmation samples, and under-stockpile samples were collected from the excavation areas and adjacent areas at AOC 22 and analyzed for benzo(a)pyrene, PCBs, arsenic, cadmium, chromium, copper, lead, and mercury. From June 22 to August 5, 2020, 5287.57 tons of soil were transported by Kansas-licensed waste transporters for off-site disposal at Johnson County Landfill after the results of waste characterization sampling determined the samples were non-hazardous (Cape 2021).

### **RISK ASSESSMENT**

The Army conducted a streamlined health risk evaluation by comparing RFI data to the approved TMCLs for the site. Proper employment of the KDHE (2015) RSK Manual values result in risk-

based remediation that is consistent with federally promulgated standards, including the Safe Drinking Water Act, 42 U.S.C. §300f – 300j-26, and is protective of human health as required by Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., including the Hazardous and Solid Waste Amendments (HSWA) and 40 CFR Part 264.101. KDHE Tier 2 risk-based cleanup

goals represent concentrations at which the contaminants pose an acceptable human health risk to receptors, including sensitive groups (e.g., children or the elderly), over a lifetime.

According to the Conceptual Land Use Plan, AOC 22 falls within the area designated as parks, trails, or open space (Johnson County, 1998). Based on this land use, the potential current and future receptors include:

- Current Construction/Excavation Workers, current,
- Residents, future.

Excavation of the surface soil removed the COCs of concern for future use at the site. The concentrations for COCs in soil were not found in surface water samples collected from bedrock discharge indicating that groundwater and surface water were not impacted by COCs.

### **SUMMARY OF ALTERNATIVES**

Alternatives considered were: Excavation and Off-Site Disposal of RCRA metals and PCBs with No Action as the comparison. Because the contaminated surface soils were excavated during the Interim Corrective Measure, no further remedial action is needed to protect human health and the environment at the site.

Groundwater will also be evaluated for site-wide contamination when the Army performs the groundwater assessment of groundwater operable unit (GWOU-#4).

### **EVALUATION OF THE PROPOSED REMEDY AND ALTERNATIVES**

The KDHE has determined that interim actions completed for soil and sediment were the appropriate remedy for AOC 22. The prior excavation of surface soil COCs was appropriate for the site to be protective of human health and the environment. This proposed decision is based upon KDHE's review of all available historical documentation regarding the Site. Surface water sampling indicates that groundwater discharge from the bedrock is not impacted.

Groundwater will also be evaluated for site-wide contaminants when the Army performs the groundwater assessment of groundwater operable unit (GWOU-#4).

### **PUBLIC PARTICIPATION**

KDHE solicits input from the community during the RCRA decision-making process to ensure that community concerns are considered in approving the recommended final corrective alternatives for AOC 22. The public is also invited to provide comments on remedial alternatives not addressed in investigation reports. KDHE has set a public comment period from January 20 to February 18, 2022 to encourage public participation in the remedy selection process. A public meeting is not scheduled

at this time. If the public meeting is requested in writing with a statement of issues to be raised, the KDHE will conduct a public meeting virtually or in person to receive both oral and written comments.

### **ADMINISTRATIVE RECORD**

The administrative record (AR) is available at the following locations:

Name/Address	Contact Information	
KDHE, Bureau of Remediation, Federal Facilities Unit 1000 SW Jackson Street, Suite 410 Topeka, Kansas 66612	Phone: (785) 296-1673 (main line) or (785) 296-8801 Margaret Townsend, Unit Chief	Monday - Friday: 8 a.m. - 12 p.m. and 1 p.m. - 4 p.m.

In addition, KDHE has established a link for access to the Statements of Basis and the associated Administrative Record for AOC 22 which are available online during the comment period at:

AOC22: <https://www.kdhe.ks.gov/716/Sunflower-Army-Ammunition-Plant>

After the public comment period, KDHE will summarize and respond to all comments received in a Final Agency Decision that will include the Response to Comments. The document will be incorporated into the AR and a copy will be sent to individuals who provided comments during the public comment period. To send written comments, request a public meeting, or obtain further information, please contact Margaret Townsend, Unit Chief at (785) 296-8801 or by email at Margaret.Townsend@ks.gov

### **FIGURES**

Figure 1: Site Location at SFAAP

### **REFERENCES**

Johnson County Rural Comprehensive Plan Resolution No. 079-98. *Conceptual Land Use Plan, Sunflower Army Ammunition Plant*. July 23, 1998.

KDHE, 2015. *Risk-Based Standards for Kansas (RSK Manual)*, September.

Battelle (Battelle Eastern Science and Technology Center), 2003. *Relative Risk Site Evaluation (RRSE), Sunflower Army Ammunition Plant*. November.

Louis Berger and Burns and McDonnell, 2017. *Final RCRA Facility Investigation (RFI) Report and Focused Corrective Measures Study (CMS) AOC 22 Old Reclamation Yard Former Sunflower Army Ammunition Plant*. January.

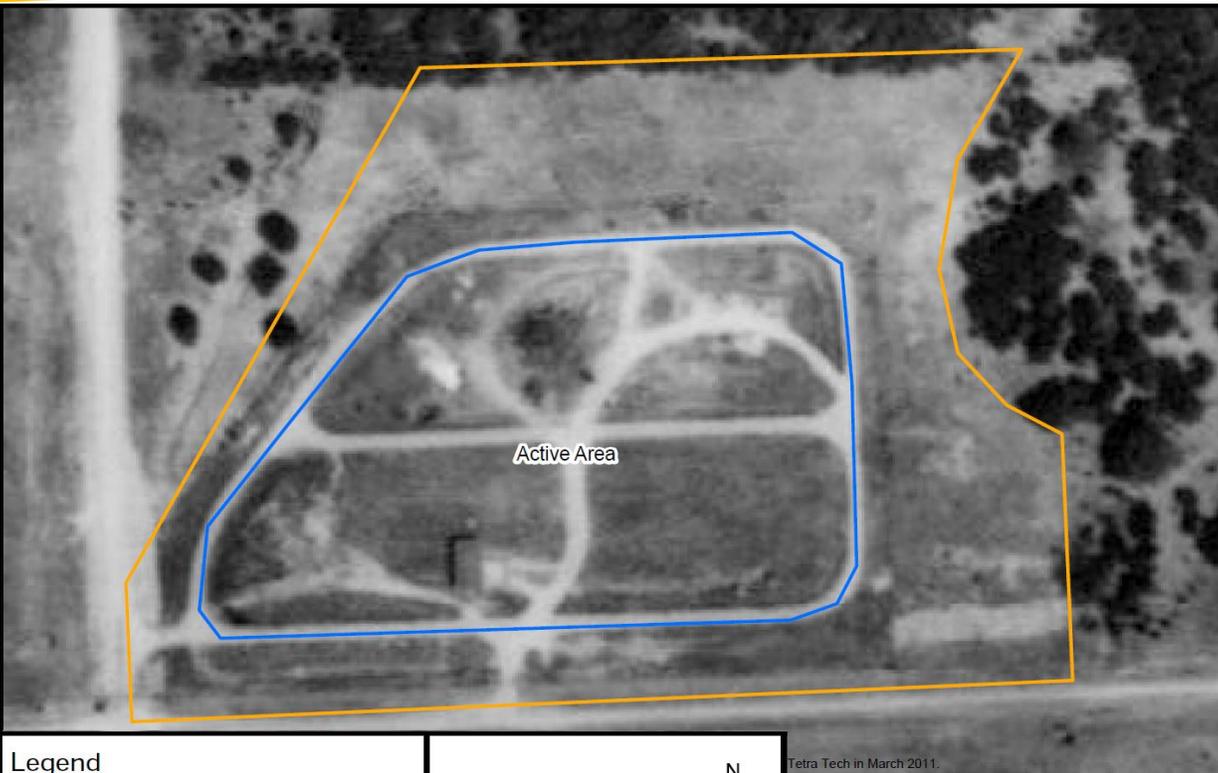
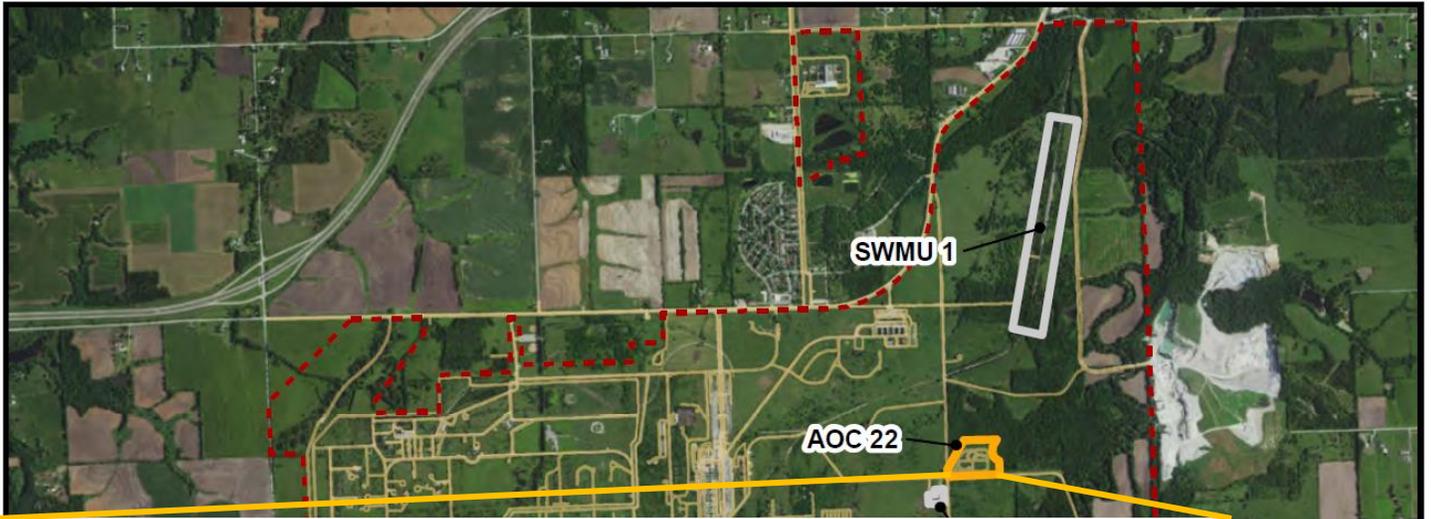
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CAPE Environmental Management Inc., 2020. *Final AOC 22 Corrective Measures Implementation (CMI) Work Plan*. April.

CAPE Environmental Management Inc., 2021. *Final AOC 22 Corrective Measures Implementation (CMI) Completion Report*. January.



**Legend**

- Active Area
- AOC 22 Site Boundary

0 30 60 120

Feet

N

Tetra Tech in March 2011.



**Legend**

- AOC 22 Site Boundary
- Site Boundary Other
- Property Boundary
- CVOff\_Road\_\_curb

0 0.25 0.5 1

Miles

N

Source: ESRI and Burns & McDonnell Engineering

Louis Berger

BURNS  
MCDONNELL

**Figure 1**

**AOC 22**

**Site Location & Detail Map**

**Former Sunflower Army**

**Ammunition Plant**

SOURCE: ESRI AND BURNS & MCDONNELL ENGINEERING