



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

STATEMENT OF BASIS
October 13, 2022

Former Sunflower Army Ammunition Plant

KDHE Project Code #: C4-046-71062

EPA ID # KS3213820878

Solid Waste Management Unit 59 – Laundry Facility,
DeSoto, Johnson County Kansas

Facility/Unit Type: SFAAP SWMU 59 Laundry Facility
Contaminants: Chromium, Arsenic, and Lead
Affected Media: Surface Soils
Proposed Remedy: NFA for surface soils and all other media

INTRODUCTION

This Statement of Basis (SB) describes the proposed corrective measures (remedy) for Solid Waste Management Unit (SWMU) 59 Laundry Facility, 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 Report and Focused Corrective Measures Study, SWMU 59, Laundry Facility, Former Sunflower Army Ammunition Plant, De Soto, Kansas* (Louis Berger and Burns & McDonnell, 2018); *Final Interim Corrective Measures Completion Report, SWMU 59 Laundry Facility, SWMU 65 Tank Farm, Former Sunflower Army Ammunition Plant, De Soto, Kansas* (Zapata, Burns & McDonnell, and Envirocon, 2019); and other documents. The public is encouraged to review these documents for a more complete understanding of the environmental issues at SWMU 59 and the corrective actions that are planned. The AR locations are noted at the end of this document.

PROPOSED REMEDY

The proposed remedy for SWMU 59 is excavation and off-site disposal for soils resulting in No Further Action (NFA). NFA means that all contaminants of concern (COCs) that may impact human health, or the environment were removed as indicated by post-confirmation sampling. Interim corrective measures (ICM) activities conducted in SWMU 59 have resulted in the remediation of impacted soils associated with MEC (Munitions and Explosives of Concern) structures. ICMs were implemented and completed in accordance with the Department of Defense Explosive Safety Board (DDESB) approved Explosive Safety Submission (ESS). Excavation occurred between October 28, 2019 and June 11, 2020. Approximately 26 cubic yards of surface soil was removed and disposed of at an estimated cost of \$60,000.

Two temporary well points (TWPs) were installed at SWMU 59 and two groundwater samples were collected and analyzed for volatile organic compounds (VOCs) on December 22, 2010. There was insufficient volume present in the TWPs to allow for any additional laboratory tests. VOC constituent concentrations were non-detect.

The RFI/CMS (Louis Berger and Burns & McDonnell, 2018) indicated that site-specific contaminants of concern (COCs) for groundwater were below the target media cleanup levels (TMCLs) for the COCs. Therefore, site-specific groundwater will be included in the NFA remedy.

Groundwater at the site will be evaluated for site-specific and site-wide COCs during the Army's site-wide assessment of Groundwater Operable Unit 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 SWMU 59

SWMU 59, Laundry Facility, is in the north-central portion of the former SFAAP, encompassing approximately 0.7 acres and consists of the former laundry facility (building 4562), former 2,950 gallon (gal) diesel fuel oil above ground storage tank (AST), and a newer 1,000-gal fuel oil AST, which was never used. The building was a one-story, wood frame, “L”-shaped structure with a concrete foundation. All sumps and drains were connected to the storm sewer that discharges approximately 1,200 feet (ft.) southeast of the site. SWMU 59 has a gentle slope to the east-southeast and is bordered by perimeter fencing on the north and west.

SUMMARY OF FACILITY

The Laundry Facility (SWMU 59) was primarily used to remove process waste and propellant contamination from workers’ clothing and dry-cleaning military dress clothing. The facility also performed flame retardant application in the north-south wing. The 2,950-gal AST was used for storing fuel for the boiler and the 1,000-gal AST was installed on a concert pad but never used. During the RCRA Facility Investigation (RFI) (Louis Berger and Burns & McDonnell, 2018), surface, subsurface, and ground water was sampled, and lead, arsenic, and chromium were determined to be COPCs at the site. 38 in situ XRF readings, 16 surface soil samples, 7 surface soil drainage samples, 23 subsurface soil samples, and 2 groundwater sample were collected and analyzed for the chemicals of interest at SWMU 59. All surface and surface drainage soil samples were analyzed for metals, total petroleum hydrocarbons (TPH)-diesel range organics (DRO), TPH-motor oil, explosives, GN, NC, NG, PCBs, SVOCs, VOCs, nitrate/nitrite, ammonia, and pesticides with no TMCL exceedances except for Lead and Arsenic. Lead and arsenic are considered the COCs. Subsurface soils were analyzed for metals, TPH, explosives, PCBs, SVOCs, VOCs, nitrate/nitrite, ammonia, total solids, and pesticides. Subsurface soils had no TMCL exceedances. Groundwater samples were analyzed for VOCs and had no TMCL exceedances. Two wells were installed. The completed wells yielded minimal groundwater that was only sufficient to collect aliquots for VOCs. No VOCs were detected in the samples. Additional groundwater evaluation will occur when the GWOU-4 sitewide assessment occurs. Soil screening and laboratory analytical data delineated the lateral and vertical extent of impacts of the COCs in environmental media at SWMU 59. Only surface soils were impacted by the operation of the site. The contaminants of potential concern (COPCs) identified at SWMU 59 are chromium, arsenic, and lead.

INTERIM CORRECTIVE MEASURES

In 2019, Interim Corrective Measures (ICMs) were implemented and completed (Zapata, Burns & McDonnell, and Envirocon, 2019). Contaminated soils were excavated to a depth of 1.0 ft below ground surface (bgs) to address the lead and arsenic TMCL exceedances. The concrete slab associated with building 4562 was removed and transported to a central concrete stockpile area. Surface soils were analyzed for metals (including antimony), explosives, nitrocellulose (NC), guanidine nitrate (GN), nitroglycerin (NG), nitroguanidine (NQ), and low, medium, and high range TPHs. 9 composite samples were collected, and all concentrations tested below the associated TMCL. The excavated area was back filled following the completion of removal activities.

RISK ASSESSMENT

The Army conducted a streamlined health risk evaluation by comparing RFI data to the approved TMCLs for the site. KDHE believes that 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.

Cleanup goals were developed for two general categories of receptors residents and non-residents, according to the appropriate land-use designation, exposure frequency, and exposure duration. According to the Johnson County Rural Comprehensive Plan Resolution No. 079-98. *Conceptual Land Use Plan, Sunflower Army Ammunition Plant*. July 23, 1998 the area encompassing SWMU 59 is proposed to be business and manufacturing. Based on this land-use, the potential current and future receptors include:

- Current: Construction and excavation workers.
- Future: Construction workers, manufacturing facility employees and visitors, and residents.

The RFI identified lead, chromium, and arsenic as COCs at SWMU 59 based on exceedances of the residential soil TMCLs, therefore, the exposure pathway for soil was considered during the assessment. Soil: Evaluated exposure pathways include incidental ingestion, inhalation of airborne particulates (dusts), and dermal contact. Based on comparison of the RFI results to TMCLs, which identified exceedances and therefore pose a potentially unacceptable health risk, the following corrective action objectives (CAOs) were established for surface soil SWMU 59:

- Mitigate risk to human health via direct contact with impacted surface soil with COC concentrations above TMCLs.
- Mitigate the potential future migration of contaminants from impacted surface soil to surface soil in drainage pathways leading to Kill Creek.

Lead was not identified in the one groundwater sample collected at the site. Additional evaluation of groundwater in the area will occur when work on GWOU-4 is done.

SUMMARY OF ALTERNATIVES

No Further Action for surface soils is the alternative for the proposed remedy. No further actions will be taken to evaluate or reduce contaminant mass, address potential exposure pathways, or reduce the potential for contaminant migration. Because the contaminated surface soils were excavated no further remedial action is needed to protect human health and the environment at the site.

Site-specific groundwater at the site showed COCs below the site-specific TMCLs. Groundwater will be included in the NFA remedy.

Groundwater will also be evaluated for area 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 excavation and disposal is recommended to address detected surface soil contamination SWMU 59. This alternative offers an effective, implementable, and timely method to control risks associated with contamination in the surface soil that is also cost-effective and would eliminate future liability for the detected lead contamination

As referenced herein, ICMs consistent with the chosen remedy have already been completed for soil and sediment remediation prior to completion of this Statement of Basis. Additional site remediation at SWMU 59 in 2019 resulted in additional excavation of surface soil for chromium, arsenic, and lead contamination and restoration of the site with clean backfill.

The interim corrective measures were appropriate for the site to be protective of human health and the environment, therefore No Further Action (NFA) will be evaluated for this SWMU. KDHE has also determined the groundwater sampling performed to date indicates the site-specific groundwater is considered clean and No Further Action (NFA) is warranted. The decision is based upon KDHE's review of all available historical documentation regarding the Site.

PUBLIC PARTICIPATION

KDHE solicits input from the community during the RCRA decision-making process to ensure that the community concerns are considered in approving the recommended remedial alternative for SWMU 59. The public is also invited to provide comments on remedial alternatives not addressed in investigation reports. KDHE has set a public comment period from October 13, 2022 to November 13, 2022 to encourage public participation in the remedy selection process. A public meeting is not scheduled at this time. If a public meeting is requested in writing with a statement of issues to be raised, the KDHE may 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	Hours
KDHE Bureau of Environmental Remediation, Federal Facilities Unit 1000 SW Jackson Street, Suite 410 Topeka, Kansas 66612	Phone: (785) 291-3066 or by email: Kyle.Skeese@ks.gov for Kyle Skeese, Project Manager for Sunflower site.	Monday - Friday: 8 a.m. - 12 p.m. and 1 p.m. - 4 p.m.

After the public comment period, KDHE will summarize and respond to all comments received in a Response to Comments document. The Response to Comments 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 Kyle Skeese, Project Manager for SFAAP, at Kyle.Skeese@ks.gov or by phone at 785-291-3066.

In addition, KDHE has established a webpage dedicated to the Site, which is available online during the comment period at: <https://www.kdhe.ks.gov/716/Sunflower-Army-Ammunition-Plant>.

FIGURES

Figure 1: Site Location of SWMU 59 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.

Louis Berger and Burns & McDonnell, 2018. *Final RCRA Facility Investigation Report and Focused Corrective Measures Study, SWMU 59, Laundry Facility, Former Sunflower Army Ammunition Plant, De Soto, Kansas*. June.

Zapata, Burns & McDonnell, and Envirocon, 2019. *Final Interim Corrective Measures Completion Report, SWMU 59 Laundry Facility, SWMU 65 Tank Farm, Former Sunflower Army Ammunition Plant, De Soto, Kansas*. December.