Savannah River NUCLEAR SOLUTIONS℠

United States Department of Energy Early Action Statement of Basis/Proposed Plan Fact Sheet for the Beneficial Reuse of Select Coal Ash and Coal Fines at the A-Area Ash Pile (788-A), A-Area Coal Pile Runoff Basin (788-3A), F-Area Ash Landfill (288-F), H-Area Ash Basin (288-H), K-Area Ash Basin (188-K), and L-Area Ash Basin (188-L) OUs, SEMS Numbers: 61, 62, 88, 90, & 91

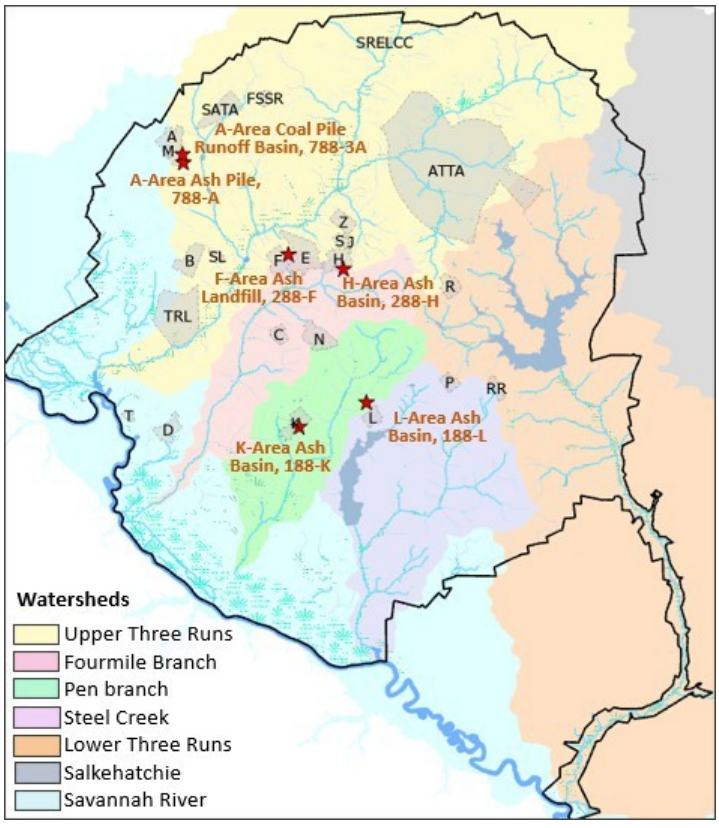
SRNS-RP-2025-01261

Savannah River Site, South Carolina **October 2025**

INTRODUCTION

This fact sheet summarizes the Early Action Statement of Basis/Proposed Plan (EA SB/PP) for the Beneficial Reuse of Select Coal Ash and Coal Fines at the A-Area Ash Pile (788-A) (AAP), A-Area Coal Pile Runoff Basin (788-3A) (ACPRB), F-Area Ash Landfill (288-F) (FAL), H-Area Ash Basin (288-H) (HAB), K-Area Ash Basin (188-K) (KAB), and L-Area Ash Basin (188-L) (LAB) Operable Units (OUs) located at the Savannah River Site (SRS). The United States Department of Energy (USDOE) owns and operates the SRS. Hazardous substances that are regulated under the federal law requirements of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) are managed at the SRS as part of a comprehensive cleanup program. The OUs are herein collectively called the remaining coal ash and coal fines OUs.

A remedial action is needed at the remaining coal ash and coal fines OUs because arsenic, naturally occurring radionuclides (potassium-40 [K-40], thorium-232 [Th-232], radium-226 [Ra-226], and uranium-238 [U-238]), and contaminants with the potential to migrate to groundwater and exceed groundwater action levels within 1,000 years (barium [Ba], uranium-233/234 [U-233/234], uranium-235 (U-235), and U-238) are present in ash/soil at levels that may pose a threat to human health and the environment. The EA SB/PP for the remaining coal ash and coal fines OUs outlines the range of remedial alternatives evaluated to clean up the contaminated ash/soil and presents the proposed remedy. The document describes how the public can comment on the proposed action through written comments and by participating in public meetings.



A-Area Ash Pile, A-Area Coal Pile Runoff Basin, F-Area Ash Landfill, H-Area Ash Basin, K-Area Ash Basin, and L-Area Ash Basin OUs BACKGROUND

Early infrastructure development of the SRS between 1951 and 1955 included the use of coal-fired powerhouses to generate steam and electricity. These powerhouses were located in each industrial/administrative area of the SRS with coal ash (coal combustion products) produced as waste as a result of boiler operations. The coal ash was either sluiced into a nearby ash basin or hauled to an ash pile. Associated coal pile runoff basins were constructed to receive surface water runoff from coal storage areas. Several SRS ash basins, coal pile runoff basins, and one ash pile have been remediated/certified closed in four SRS areas (A, D, P and R). The remedial actions for these OUs were implemented to meet regulatory requirements due primarily to elevated levels of arsenic and naturally occurring radionuclides that result in unacceptable long-term risks to a future resident or industrial worker from direct exposure to the material.

In general, the remaining coal ash and coal fines OUs (AAP, ACPRB, HAB, KAB, LAB and FAL) are located near or within the perimeter of industrial areas. No current or future development of the remaining coal ash and coal fines OUs is planned. To support the risk management decision-making, both the residential (unrestricted) and industrial land use scenarios were evaluated.

A-Area Ash Pile and A-Area Coal Pile Runoff Basin Operable Unit

The AAP is located in A Area in the northwest portion of SRS within the Upper Three Runs watershed. The AAP contains bottom ash and fly ash received from the A-Area coal-fired boiler house (784-A) between 1952 and 1978. The AAP encompasses 0.65 hectares (ha) (1.60 acres [ac]) and is located south of the A-Area Coal Pile Runoff Basin (ACPRB). The total area of ash, including ash outside the boundary, is approximately (~)1.03 ha (2.55 ac). The total estimated volume of ash inside and outside of the AAP is ~53,518 cubic meters (m^3) (70,000 cubic yards [yd^3]). During operation of the AAP, the pile was graded, the top leveled, and the north side (stream side) benched. Currently, the AAP is heavily vegetated with mature pines, hardwoods, and a dense undergrowth.

The ACPRB is located in A Area, just north of the AAP, in the northwest portion of SRS within the Upper Three Runs watershed. The basin was constructed in 1978 and operated until closure of the boiler house in 2008. Runoff from the coal storage pile was collected/transported in ditches and underground pipes that discharged to the ACPRB. The basin is an unlined earthen surface impoundment surrounded by earthen berms. The ACPRB covers ~1.06 ha (2.62 ac). The total volume of coal fines within the basin is ~7,646 m^3 (10,000 yd^3).

The AAP and ACPRB OU was investigated via the Remedial Investigation/Feasibility Study process in 2008. The collected data was of sufficient quality and quantity to conduct a human health and ecological risk assessment, contaminant migration (CM)[1], analysis, and principal threat source material (PTSM)[2] evaluation. Results from the 2008 investigation identified one metal (arsenic) and three radionuclides (K-40, Ra-226, and U-238) in the AAP surface ash/soil that pose a potential risk to human health (i.e., hypothetical resident or industrial worker receptor) greater than 1.0E-06[3]. Ra-226 risk will be managed under the cleanup level established for the entire decay series. Ra-226 is a daughter product of the U-238 decay series. Results from the 2008 investigation also identified arsenic present in the surface ash/soil of ACPRB that poses a human health risk greater than 1.0E-06. The evaluation determined there was no threat to ecological receptors, no CM concerns, and no presence of PTSM identified for this OU.

H-Area Ash Basin Operable Unit

The HAB OU is located in the Fourmile Branch watershed, downgradient of H Area. This OU received ash via sluice of wet ash slurry from the H-Area powerhouse (284-H). The powerhouse operated from 1950 to 1990. All operating systems in the H-Area powerhouse have been shut down. The HAB OU receives rainwater runoff that can be re-routed, as necessary, to support future remedial activities at the HAB OU. The area of the HAB OU is 5.29 ha (13.06 ac). Additional ash outside of the basin boundary is estimated to have an area of ~7.45 ha (18.40 ac). The total estimated volume of ash inside and outside of the basin is 198,105 m^3 (259,112 yd^3). The HAB OU is currently heavily vegetated with mature pines, hardwoods, and dense undergrowth.

Arsenic and naturally occurring radionuclides (K-40, Th-232, and U-238) are present in surface ash/soil in the HAB OU that pose an unacceptable risk to the future resident or industrial worker. Arsenic in the surface ash/soil of the HAB OU had an associated risk greater than 1.0E-06. The CM analysis identified CM concerns in the zone above the groundwater table for the HAB OU (Ba, U-233/234, U-235, and U-238) with the potential to migrate to groundwater and exceed groundwater action levels within 1,000 years. No threat to ecological receptors and no presence of PTSM were identified for this OU.

[1] A CM analysis evaluates the potential for surface contaminants to migrate to groundwater.
[2] PTSM are described as highly toxic materials that would present a significant risk to human health or the environment should exposure occur.
[3] A risk greater than or equal to 1.0E-06 indicates a probability of 1 chance in 1,000,000 of an individual developing cancer.

K-Area Ash Basin Operable Unit

The KAB OU is located southwest of the K-Reactor Complex and is in the Pen Branch watershed. The KAB OU received ash from the K-Area coal-fired powerhouse (184-K) via wet sluice. The powerhouse operated from 1951 to 1990. The KAB OU receives stormwater that can be re-routed, as necessary, to support future remedial activities at the KAB OU. The area of the basin is ~4.52 ha (11.16 ac); however, ash was discovered beyond the basin, covering approximately an additional 1.54 ha (3.81 ac). The total volume of ash inside and outside of the basin is ~208,362 m^3 (272,527 yd^3). The KAB OU is heavily vegetated with mature pines, hardwoods, and a dense undergrowth.

Arsenic and naturally occurring radionuclides (K-40, Th-232, and U-238) are present in surface ash/soil in the KAB OU that pose an associated risk greater than 1.0E-06 to the future resident or industrial worker. No threat to ecological receptors, no CM threat, and no presence of PTSM were identified for this OU.

L-Area Ash Basin Operable Unit

The LAB OU is located northeast of the L-Reactor Complex and is in the Steel Creek and Pen Branch watersheds. The LAB OU received ash from the L-Area coal-fired powerhouse (184-L) via wet sluice. The powerhouse operated from 1951 to 1968. The area of the basin is ~7.13 ha (17.61 ac). Additional ash outside of the basin boundary is estimated to have an area of 0.68 ha (1.67 ac). The volume of fly ash and bottom ash is estimated to be ~246,971 m^3 (323,026 yd^3) including ash deposits inside and outside the basin. Currently, the LAB OU is heavily vegetated with mature pines, hardwoods, and a dense undergrowth.

Arsenic and naturally occurring radionuclides (K-40, Th-232, and U-238) are present in surface ash/soil in the LAB OU that pose a unacceptable risk greater than 1.0E-06 to the future resident and industrial worker. The CM analysis identified CM concerns in the zone above the groundwater table for the LAB OU (Ba), with the potential to migrate to groundwater and exceed groundwater action levels within 1,000 years. No threat to ecological receptors and no presence of PTSM were identified for this OU.

F-Area Ash Landfill Operable Unit

The FAL OU is located in the Upper Three Runs watershed between F and H Area. The FAL OU is an active Class II Landfill and consists of the active F-Area Landfill (288-F) and the area outside the 288-F boundary where ash deposits are known to exist. 288-F became operational in 1954 and received ash from the A-, F-, and H-Area powerhouses during its operational history. The area of ash within the landfill is ~2.84 ha (7.01 ac) with an estimated area of 4.64 ha (11.47 ac) of ash observed outside the landfill. The total volume of ash at the inside and outside of the FAL OU is ~163,201m^3 (213,459 yd^3). The FAL OU is surrounded by a relatively congested industrial area and has engineered storm water controls in place.

Samples were collected from the FAL OU and analyzed for metals in 2012. With the exception of arsenic, no samples were above residential risk screening levels and/or SRS background levels. Arsenic concentrations were consistent with other ash containing units. Arsenic in the surface ash/soil of the FAL OU had an associated risk greater than 1.0E-06 for the residential exposure scenario.

Radionuclide results are not available but are expected to be consistent with naturally occurring radionuclides present at similar ash basins (i.e., HAB, KAB, and LAB OUs). Based on the arsenic results and similarity with the other ash OUs, the Core Team agreed with the use of analogous site data from the HAB, KAB, and LAB OUs combined into one dataset for use at the FAL OU. Using this data, three naturally occurring radionuclides (K-40, Th-232, and U-238) pose a potential risk to human health greater than 1.0E-06 in the FAL OU. No threat to ecological receptors, no CM threat, and no presence of PTSM were identified for this OU.

CLEANUP GOALS

Contaminants are present at all of the evaluated OUs at levels that are not suitable for unrestricted use. Cleanup goals for the remaining coal ash and coal fines OUs include the following:

AAP and ACPRB OU:

- Prevent exposure of human receptors (i.e., future resident and/or industrial worker) to arsenic and naturally occurring radionuclides (K-40 and U-238) in surface ash/soil at levels exceeding 1.0E-06 risk.

FAL, HAB, KAB, and LAB OUs:

- Prevent exposure of human receptors to arsenic and naturally occurring radionuclides (K-40, Th-232, and U-238), in surface ash/soil at levels exceeding 1.0E-06 risk.
- Prevent migration of contaminants (U-233/234, U-235, and U-238) in vadose zone to groundwater at levels that could exceed groundwater action levels within 1,000 years at the HAB OU.
- Prevent migration of contaminants (Ba) in vadose zone to groundwater at levels that could exceed groundwater action levels within 1,000 years at the HAB and LAB OUs.

PROPOSED REMEDY

A two-phased remedy consisting of Land Use Controls (LUCs) with beneficial reuse is the preferred alternative for the remaining coal ash and coal fines OUs. Phase 1 would implement LUCs for each of the remaining coal ash and coal fines OUs. LUCs would include the posting and maintenance of warning signs and the establishment of administrative and worker access controls to effectively reduce exposure of contaminated media to human receptors. General public access to the site is limited to site workers. This phase of the alternative does not support unrestricted land use and would require five-year remedy reviews. Due to the CM concerns at the HAB and LAB OUs, groundwater monitoring wells would be installed/identified at these two OUs and would be monitored every five years to coincide with the five-year remedy reviews. Groundwater beneath the FAL OU would continue to be monitored semi-annually. The 288-F Class II Ash Landfill will remain a permitted operating landfill until Phase 2 of the proposed remedy is initiated.

Phase 2 of the implementation includes excavation of the ash and its beneficial reuse. Beneficial reuse will involve the excavation of contaminated ash/soil for later incorporation into a reuse option. Following completion of the excavation activities, the ash units will be restored (i.e., contoured for proper drainage and revegetated as necessary). LUCs will remain in place until beneficial reuse can occur. This alternative is effective in eliminating human exposure to contaminants, prevents direct radiation exposure, and reduces contaminant mobility. Proven unencapsulated beneficial reuse alternatives for coal ash/fines include use as fill material. This phase of the alternative supports unrestricted land use and would not require five-year remedy reviews.

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SEMS Numbers: 61, 62, 88, 90, & 91
SRNS-RP-2025-01261

Savannah River Site, South Carolina **October 2025**

The United States Environmental Protection Agency and the South Carolina Department of Environmental Services concur with the proposed remedies for the remaining coal ash and coal fines OUs.

FOR MORE INFORMATION

The Administrative Record File, which contains the information pertaining to the selection of the response action, is available at the following locations:

US Department of Energy
Public Reading Room
Gregg-Graniteville Library
University of South Carolina – Aiken
471 University Parkway
Aiken, South Carolina 29801
(803) 641-3465

Thomas Cooper Library
Government Information and Maps Department
University of South Carolina
1322 Greene Street
Columbia, South Carolina 29208
(803) 777-4841

The Administrative Record File is available electronically at the following address:
http://www.srs.gov/general/programs/soil/arf/arfirf.html

Hard copies of the Statement of Basis/Proposed Plan for the remaining coal ash and coal fines OUs are available at the following locations:

Reese Library
Government Information Department
Augusta University
2500 Walton Way
Augusta, Georgia 30904
(706) 737-1744

Asa H. Gordon Library
Savannah State University
2200 Tompkins Road
Savannah, Georgia 31404
(912) 358-4324

HOW TO SUBMIT COMMENTS

The public comment period for the Statement of Basis/Proposed Plan for the remaining coal ash and coal fines OUs begins [date] and ends [date]. To request a public meeting during the public comment period, to obtain more information concerning this document, or to submit written comments, contact one of the following:

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Bureau of Land and Waste Management
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