Savannah River NUCLEAR SOLUTIONS℠

Scoping Summary for the Automotive Repair Shop (716-A) Operable Unit (U)

(Post-Work Plan Characterization)

SEMS Number: 62

SRNS-RP-2023-00820

June 2025 (Final)

SAVANNAH RIVER SITE • AIKEN, SOUTH CAROLINA

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and
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Aiken, South Carolina

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1.0 PROJECT PHASE AND STATUS

This scoping summary supports Core Team (i.e., representatives from the United States Department of Energy [USDOE], United States Environmental Protection Agency [USEPA], and South Carolina Department of Environmental Services [SCDES][1]) post-work plan characterization and preliminary data analysis discussion for the Automotive Repair Shop (716-A) Operable Unit (OU). Previously, the Automotive Repair Shop (716-A) was one of two subunits in the Automotive Repair Shop (716-A) and Paint Shop (725-A) OU. In the Remedial Investigation (RI) Work Plan Characterization scoping meeting held October 2, 2023, the Core Team agreed that there are no problems warranting action for the Paint Shop (725-A) and no additional data needed for this subunit (Savannah River Nuclear Solutions, LLC [SRNS] 2023b). As agreed by the Core Team, the Paint Shop (725-A) was transferred to Federal Facility Agreement (FFA) Appendix K.2, *D&D Facilities (or remnants) that Require No Further Action* on March 26, 2024 (FFA 1993). The FFA was revised to include the Automotive Repair Shop (716-A) as a standalone OU. The decommissioned facility remnants of the Automotive Repair Shop (716-A) OU are currently listed in FFA Appendix C.4, *D&D Facilities (or Remnants) That May Warrant Response Action* (FFA 1993).

The objective of this scoping meeting, held on June 11, 2025, was to reach Core Team agreement that characterization of the Automotive Repair Shop (716-A) OU is adequate to proceed to the Problem Identification evaluation. Sampling for the Automotive Repair Shop (716-A) OU was completed in 2024 as described in the *Remedial Investigation Work Plan for the Automotive Repair Shop (716-A) Operable Unit* (SRNS 2024). The Revision 1 RI Work Plan was approved by the USEPA and SCDES on May 28, 2024, and June 21, 2024, respectively. This scoping summary presents information on site history, process knowledge, the conceptual site model, sampling

[1] South Carolina Department of Environmental Services (SCDES) was known as South Carolina Department of Health and Environmental Control (SCDHEC) prior to July 1, 2024.

design, characterization data, the nature and extent of contamination, and screening results for the baseline risk assessment, principal threat source material (PTSM) evaluation, and contaminant migration (CM) analysis.

The Automotive Repair Shop (716-A) OU is a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-only unit. A combined RI/Baseline Risk Assessment (BRA)/Feasibility Study (FS) report is scheduled for submittal by September 30, 2025 (FFA 1993).

2.0 AUTOMOTIVE REPAIR SHOP (716-A) OPERABLE UNIT HISTORY AND BACKGROUND

A Area, which is part of the larger A/M Area in the northwestern portion of Savannah River Site (SRS) (Figure 1), previously served as the main administrative area for the SRS and includes several Resource Conservation and Recovery Act (RCRA)/ CERCLA waste units. Maintenance facilities such as the Automotive Repair Shop (716-A) OU were housed within A Area (Figure 2). The Automotive Repair Shop (716-A) OU building was decommissioned using the Deactivation and Decommissioning (D&D) Integrated Sampling Model (ISM) in the 2004-2005 timeframe.

The single-story structure was constructed on a concrete slab and had an area of 42,014 square feet (ft^2) under roof. The structure footprint is approximately 180 feet (ft) by 360 ft. The structure was erected and occupied in 1953. The Automotive Repair Shop (716-A) OU was used as an automotive repair facility containing service bays with offices, related storage areas, mechanical, and electrical rooms. This facility also contained many vehicle lifting systems, battery charging and storage room, and brake repair area. Visual evidence indicated that a concrete pad, located on the southeast side of the Automotive Repair Shop (716-A) OU, was the location of an outside underground waste oil storage tank, which was removed in the early 1990's. The waste oil storage tank was replaced by a new above ground system. An ancillary structure--a firewater valve house--was located on the west side of the Automotive Repair Shop (716-A) OU.

The *Facility Decommissioning Evaluation Automotive Repair Shop, 716-A* (Westinghouse Savannah River Company [WSRC] 2005b) categorized the building as an "Other Industrial" Hazard Category facility and identified the ISM as the appropriate decommissioning model for this potentially contaminated facility. Characterization was accomplished using a combination of process knowledge/historical release information, verification walkdowns, and sampling, as appropriate. A review of the Occurrence Reporting and Processing System/Site Item Reportability Issue Management database from 1993 to 2005 indicated no evidence of any spills to the environment. However, motor oil stains were found in the maintenance areas, lubrication pit (Room 103) (Figure 3), side trench, hydraulic lifts, cylinders, and narrow trenches. Fluid/oil stains were removed during decommissioning and the trenches and sumps were sampled to verify contaminants were less than the applicable Savannah River National Laboratory Derived Concentration Guideline Levels (DCGLs) (WSRC 2005a). Based on process knowledge, chemical operations took place only in the spray paint room (Figure 3). Therefore, the post-decommissioning final verification survey would be restricted to the spray paint room. Contaminants of concern (COCs) included lead, chromium, and volatile organic compounds (VOCs).

The *Decommissioning Project Final Report 716-A, Automotive Repair Shop* (WSRC 2005a) documents the risk assessment that was conducted on the Automotive Repair Shop (716-A) OU concrete slab. Potential risks were estimated for an industrial worker exposed to residual contamination. The structure was a non-radiological building. Therefore, radiological risks were not considered. The total cumulative risk (TCR) risk to an industrial worker exposed to the general slab areas was estimated to be 4.36E-07. The non-cancer hazard index (HI) for the general slab areas was estimated to be 0.049. A vadose zone contamination fate and transport model (Vadose Zone Contaminant Migration Model – Multi-Layered [VZCOMML]) was performed for the Automotive Repair Shop (716-A) OU concrete slab. As documented in the Decommissioning Project Final Report (DPFR), a comparison of the final verification sample contamination levels with the associated VZCOMML DCGLs demonstrated that the residual contamination on the Automotive Repair Shop (716-A) OU concrete slab were below threshold levels that could impact the groundwater.

The DPFR concluded the building structure decommissioning activities have been completed, including waste disposal in accordance with federal and state regulations. The building structure was demolished to the foundation. The clean concrete slab remains on its original footprint and penetrations greater than 2 inches in diameter were grouted, including all pits associated with the automotive hydraulic lift systems. Before and after photographs of the decommissioning activities are captured in Figure 4 and Figure 5, respectively. The DPFR concluded that the remaining structure was free of hazards, both physical and chemical, and therefore, warrants no further action. No long-term stewardship activities were identified for the structure because it posed no threat to human health or the environment.

Comments received by the USEPA and the SCDES on the Facility Decommissioning Evaluation (FDE) and DPFR requested SRS to conduct soil sampling for target analyte list/target compound list (TAL/TCL) constituents underneath the Automotive Repair Shop (716-A) OU remnant slab at the 103 Lubrication Pit area to determine whether there has been a release to the environment. Because the soil beneath the Automotive Repair Shop (716-A) OU remnant slab was outside of the scope (i.e., physical boundary) of the facility decommissioning project, the Automotive Repair Shop (716-A) OU was transferred to FFA Appendix C.4, *D&D Facilities (or Remnants) That May Warrant Response Action,* for further evaluation. Sampling beneath the concrete slab at the 103 Lubrication Pit was performed in accordance with the approved RI Work Plan (SRNS 2024). In addition, a comment received from the USEPA on the FDE requested that all drain lines and/or sewer lines for the Automotive Repair Shop (716-A) OU be referred to, and further investigated by, the A-Area OU. Rather than deferring this scope to the A-Area OU, sampling beneath the drain lines and/or sewer lines at the Automotive Repair Shop (716-A) OU was performed in accordance with the approved RI Work Plan. The six soil boring locations are presented in Figure 6. Field work to support the RI Work Plan characterization was completed in December 2024.

3.0 LAND USE

The Automotive Repair Shop (716-A) OU is in an area designated for industrial use as defined by the SRS Land Use Control Assurance Plan. No current or projected future development of the OU is planned. Groundwater is not part of the OU and will be addressed under the RCRA corrective action program defined in the SRS RCRA Permit Renewal for the M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities.

4.0 AUTOMOTIVE REPAIR SHOP (716-A) OPERABLE UNIT

4.1 *RI Work Plan Characterization*

Based on Core Team agreements from the 2023 Work Plan scoping meeting for the Automotive Repair Shop (716-A) OU, additional data was needed for completing a PTSM evaluation and CM analysis of the soils beneath the Automotive Repair Shop (716-A) OU remnant concrete slab. The RI Work Plan characterization field work was completed in December 2024. Six soil borings were completed at the Automotive Repair Shop (716-A) OU in accordance with the RI Work Plan (SRNS 2024). The soil boring locations were selected to investigate soils below the 716-A storm sewer lines and the 103 Lubrication Pit (Figure 6). Five soil borings (ARS-001-SB, ARS-002-SB, ARS-003-SB, ARS-004-SB, and ARS-006-SB) were continuously cored to a total depth of 57 ft below ground surface (bgs). At ARS-001-SB, ARS-002-SB, ARS-003-SB, and ARS-004-SB, core was successfully recovered to the total depth and samples were collected every five feet. Location ARS-005-SB, was continuously cored to a total depth of 167 ft bgs to sample core through the water table and to provide site specific lithologic information to perform the CM analysis. The water table was estimated to be around 140 ft bgs based on nearby wells, but was not confirmed during drilling of location ARS-005-SB. Core from the ARS-005-SB soil boring was successfully recovered and was sampled every 5 ft from ground surface to approximately 54 ft bgs and was sampled every 10 ft thereafter to total depth of 167 ft bgs. From the six soil borings, a total of 70 regular (REG) samples, four split samples, and four field duplicate samples were collected.

The one deviation from the RI Work Plan was due to poor recovery of core in the first 21 ft at location ARS-006-SB and no samples were collected in this interval. Poor recovery in the first 21 ft of core at ARS-006-SB was likely due to loosely compacted soil beneath the concrete slab being pushed away from the core barrel during drilling activities. Recovered material consisted of a water/soil slurry that contained a large amount of drilling fluids and was not able to be sampled as soil media. It is uncertain what caused the poor recovery in this interval. It could be explained by poor compaction during building construction activities. ARS-006-SB was located on the edge of the building footprint in close proximity to underground sewer lines. It is possible that water infiltrated through the transition between the concrete slab and the surrounding asphalt or that the sewer line had previously leaked. Either loosely compacted soil or excess water in the subsurface could have resulted in conditions causing poor recovery during drilling activities. The four samples that could not be collected from the first 21 ft of core were distributed throughout the remaining core at ARS-006-SB. Soil core and soil samples were collected from approximately 0-21 ft bgs at ARS-005-SB (i.e., nearest soil boring located 40 ft to the north) and the other four soil borings (i.e., ARS-001-SB through ARS-004-SB) with no results exceeding limits. SRS believes that the soil samples collected from 21 – 57 ft bgs at ARS-006-SB and the soil samples from the other five soil borings provide adequate coverage to eliminate any perceived data gap. Figure 7 presents a cross-section of the Automotive Repair Shop (716-A) OU soil beneath the remnant concrete slab.

All collected samples were analyzed for all TAL/TCL analytes (excluding herbicides and pesticides). From the 70 REG samples at the Automotive Repair Shop (716-A) OU, there were 33 constituents detected in at least one sample. Table 1 presents a summary of the detected results from the Work Plan characterization. Of the detected constituents, two constituents were detected below two times (2X) SRS background concentrations (WSRC 2006) and were not considered unit-specific constituents (USCs). The 31 constituents identified as USCs for the Automotive Repair Shop (716-A) OU were evaluated in the PTSM and CM screening described in the following section.

4.2 *Automotive Repair Shop (716-A) Operable Unit Screening*

4.2.1 Remnant Concrete Slab

As reported in the DPFR, data collected for the Automotive Repair Shop (716-A) OU concrete slab was summarized in the final verification survey and consisted of 16 sample locations, which were composited in 4 sets of 4 samples and were obtained from the Spray Paint Room for RCRA metals analysis (arsenic, barium, cadmium, chromium, lead, mercury [elemental], mercury [compounds], selenium, and silver) (WSRC 2005c). Nine single samples were taken for VOC analysis in the Spray Paint Room.

The human health risk evaluation reported in the DPFR was updated in this scoping summary document by applying the approved Environmental Compliance & Area Completion Projects (EC&ACP) protocols and November 2024 USEPA Regional Screening Levels to the maximum detected concentration of each analyte in the Spray Paint Room (Appendix B of the DPFR; WSRC 2005a) (Table 2). The updated residential scenario had a noncarcinogenic HI = 0.021 and cancer TCR = 4.1E-07. The updated industrial worker scenario had an HI = 0.003 and TCR = 9.4E-08. The updated risk evaluation confirmed the conclusions of the DPFR that there are no problems warranting action for human receptors at the Automotive Repair Shop (716-A) OU remnant concrete slab.

A quantitative ecological risk assessment is not warranted. The concrete slab does not provide any appreciable habitat, and a survey of the surrounding area indicates the physical setting does not provide adequate habitat for population level impacts to wildlife receptors since it is very small in size and located in an industrial setting. There are no problems warranting action from an ecological risk perspective.

As reported in the DPFR, a CM analysis was performed on the final verification survey data to identify residual constituents in the remnant concrete slab that could potentially impact the groundwater. The VZCOMML simulations demonstrated there were no CM problems warranting action associated with the Automotive Repair Shop (716-A) OU remnant concrete slab.

4.2.2 Soil Beneath Automotive Repair Shop (716-A) Operable Unit

Soil samples collected during the 2024 RI Work Plan characterization effort were analyzed for all TAL/TCL analytes (excluding herbicides and pesticides). The remnant concrete slab prevents exposure of the soil beneath Automotive Repair Shop (716-A) OU to human and ecological receptors. Therefore, a human health risk assessment and an ecological risk assessment is not warranted for the soil beneath the Automotive Repair Shop (716-A) OU. The 31 USCs identified from the collected soil samples were included in a PTSM evaluation and a CM analysis screening using maximum detected concentrations or calculated 95% upper confidence levels (UCL) in accordance with protocols in the EC&ACP Regulatory Document Handbook (SRNS 2023a).

PTSM evaluation screening was performed using the maximum detected concentration from all depths (Table 3). The data screening indicates that there are no PTSM problems warranting action (HI = 0.655; TCR = 1.09E-05) for the soil beneath the Automotive Repair Shop (716-A) OU. The CM analysis screening (Table 4) was completed using VZCOMML[2] with the calculated 95% UCL values for the 31 USCs (Table 1). Based on the results of the CM screen, there are no CM problems warranting action for the soil beneath the Automotive Repair Shop (716-A) OU.

Problem(s) Warranting Action	Remedial Action Objectives	Scope of Problem(s)	Likely Response Actions
• No human health, ecological, PTSM, or CM constituents of potential concern (COPCs) were identified for the concrete slab. • No PTSM or CM COPCs were identified for soil beneath the Automotive Repair Shop (716-A) OU.	None	None	No Action
Uncertainties			
None			

[2] Vadose Zone Contaminant Migration Multi-Layered Model (VZCOMML©) Version 4.0, Copyright TXu 1-663-361, 2009, Savannah River Nuclear Services, LLC.

5.0 OPERABLE UNIT STRATEGY

Sampling of the Automotive Repair Shop (716-A) OU was completed in accordance with the approved RI Workplan, and there were no data needs identified that require additional sampling. The Automotive Repair Shop (716-A) OU investigation is complete and sufficient for completing final risk and CM analysis. Human health, PTSM, and CM analysis screening concluded that there are no problems warranting action for the remnant concrete slab or soils beneath the Automotive Repair Shop (716-A) OU (including samples beneath the 103 Lubrication Pit, drain lines, and sewer lines). All assessments were performed implementing the protocols in the approved EC&ACP Regulatory Document Handbook (SRNS 2023a) and the most current toxicity information. An ecological risk assessment was not necessary for the Automotive Repair Shop (716-A) OU because the physical industrial setting does not provide adequate habitat.

The screening evaluations were performed based on conservative assumptions using maximum detected concentrations or 95% UCLs, following applicable protocols. Based on the screening results, the Automotive Repair Shop (716-A) OU supports unrestricted land use and would require no remedial action. According to USEPA guidance, if no remedial action is needed to ensure protection of human health and the environment, none of the CERCLA §121 statutory determinations are necessary (USEPA 1999). This means that there would be no need to evaluate the No Action alternative or other alternatives against the nine criteria specified under CERCLA.

For this reason, SRS proposed that no additional scoping meetings are needed for this OU, and the project team should prepare a RI/BRA report for submittal by September 30, 2025, in place of a RI/BRA/FS report. The proposed strategy to move directly from the RI/BRA report to a No Action Proposed Plan (Revision 0 document due July 14, 2026) and No Action Record of Decision (Revision 0 document due January 15, 2027) was discussed with the Core Team at the June 11, 2025 scoping meeting.

The Core Team agreed that there were no problems warranting action for the Automotive Repair Shop (716-A) OU, and the project team should proceed with preparation of a RI/BRA in place of a RI/BRA/FS report. A record of Core Team agreements and key changes to the scoping summary are documented in the following tables.

RECORD OF CORE TEAM AGREEMENTS[3]	
Date	**Description of Agreement**
10/02/2023	The Core Team agrees with the problem warranting action for the Automotive Repair Shop (716-A) and the proposal to sample soil for TAL/TCL (excluding herbicides and pesticides) constituents underneath the concrete slab at the 103 Lubrication Pit at 1 location and beneath the underground drain lines and/or storm sewer lines at 4 locations. The sampling strategy will be documented in the RI Work Plan (including the SAP and OU strategy) to be submitted on or before 1/25/2024.
10/02/2023	The Core Team agrees that there are no problems warranting action and there is no additional data needed at the Paint Shop (725-A). Building 725-A will be transferred by USDOE letter to FFA Appendix K.2, D&D Facilities (or remnants) that Require No Further Action.
06/11/2025	The Core Team agrees that characterization of the Automotive Repair Shop (716-A) OU is adequate to move to Problem Identification and for remedial decision making.
	The Core Team agrees that there are no problems warranting action for the Automotive Repair Shop (716-A) OU.
	The Core Team agrees that no additional scoping meetings are needed for the Automotive Repair Shop (716-A) OU, and the project team should prepare a RI/BRA report for submittal by September 30, 2025, in place of a RI/BRA/FS report.

KEY CHANGES TO THE SCOPING SUMMARY[4]			
Date	**Section**	**Description of Change**	**Rational for Change**
6/2025	All	Updated the October 2023 RI Work Plan Characterization scoping summary to present the results of the 2024 characterization.	Updated all sections to reflect the post-work plan characterization project phase.

[3] Core team agreements will be documented at each scoping phase and should be retained for each successive phase to maintain a comprehensive list for the life of the project.
[4] The Key Changes table documents significant changes from the previous scoping summary. This table is updated for each phase of the project and is not a comprehensive list.

6.0 REFERENCES

FFA, 1993. *Federal Facility Agreement for the Savannah River Site*, Administrative Docket No. 89-95-FF (Effective Date: August 16, 1993)

SRNS, 2023a. *Environmental Compliance and Area Completion Projects Regulatory Document Handbook*, SRNS-RP-2022-00330, Revision 0, June 2023, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC

SRNS, 2023b. *Scoping Summary for the Automotive Repair Shop (716-A) and Paint Shop Building (725-A) Operable Unit (U) – RI Work Plan Characterization*, SRNS-RP-2023-00820, October 2023, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC

SRNS, 2024. *Remedial Investigation Work Plan for the Automotive Repair Shop (716-A) Operable Unit (U)*, SRNS-RP-2023-01234, Revision 1, May 2024, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC

USEPA, 1999. *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents,* OSWER 9200.1-23P, United States Environmental Protection Agency, July 1999

WSRC, 2005a. *Decommissioning Project Final Report 716-A, Automotive Repair Shop*, V-PCOR-A-00043, Revision 0, June 30, 2005, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2005b. *Facility Decommissioning Evaluation Automotive Repair Shop, 716-A*, G-FDE-A-00039, Revision 1, January 24, 2005, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2005c. *Final Verification Survey for 716-A*, SDD-SAP-2005-00004, Revision 0, May 3, 2005, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2006. *Background Soils Statistical Summary Report for the Savannah River Site*, ERD-EN-2005-0223, Revision 1.0, October 2006, Washington Savannah River Company, LLC, Savannah River Site, Aiken, SC

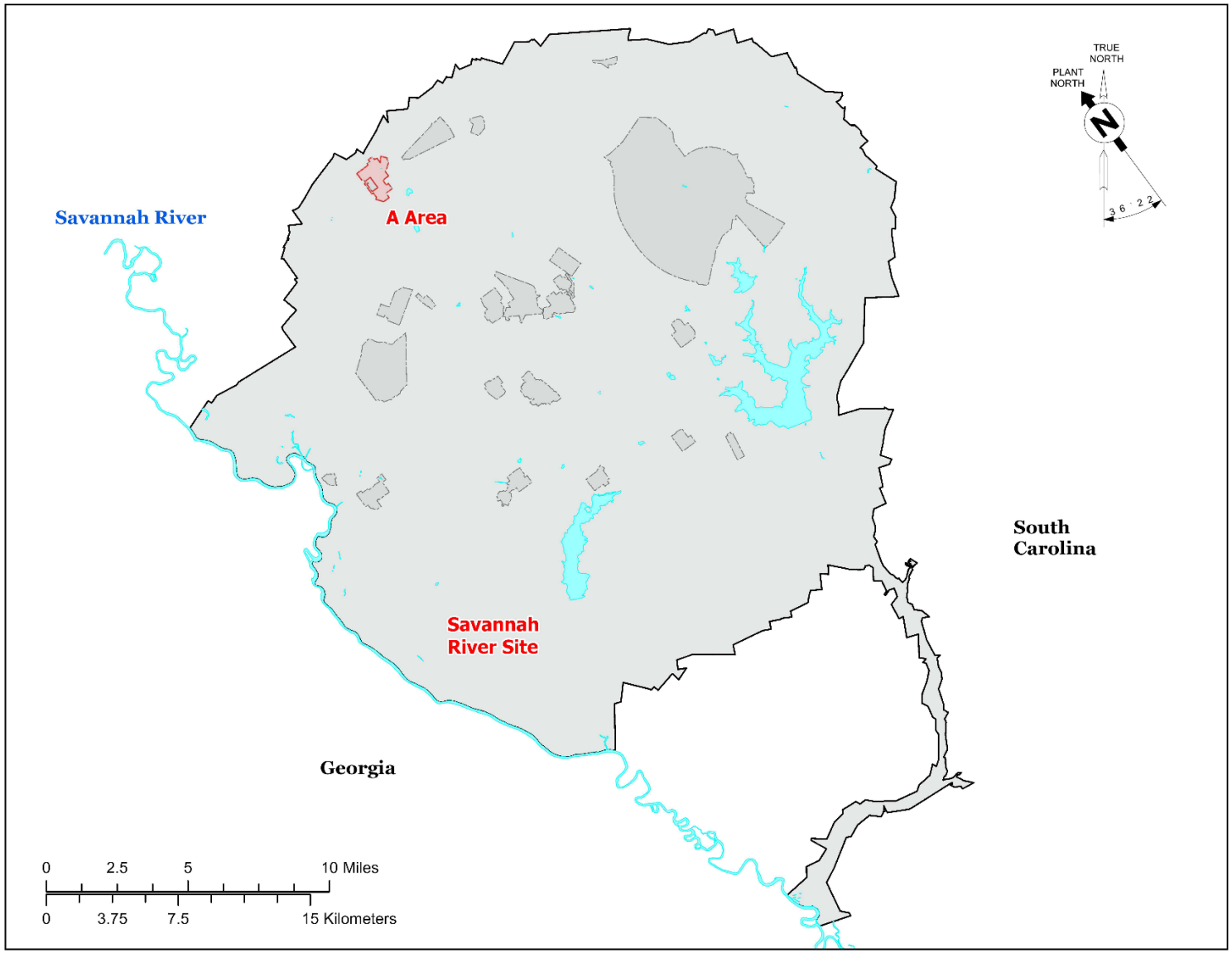

Figure 1. Location of A Area within Savannah River Site

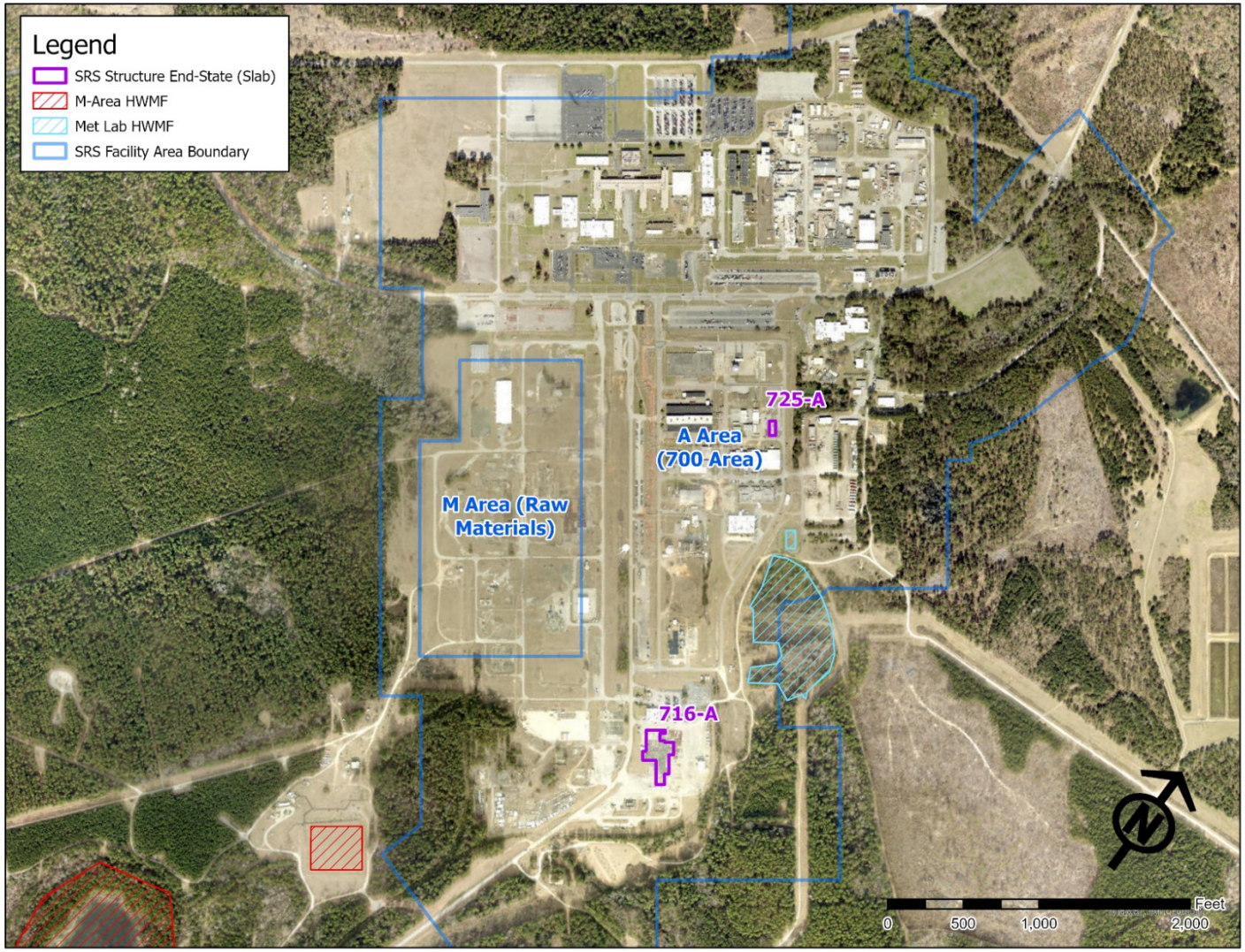

Figure 2. Location of Automotive Repair Shop (716-A) OU within A Area

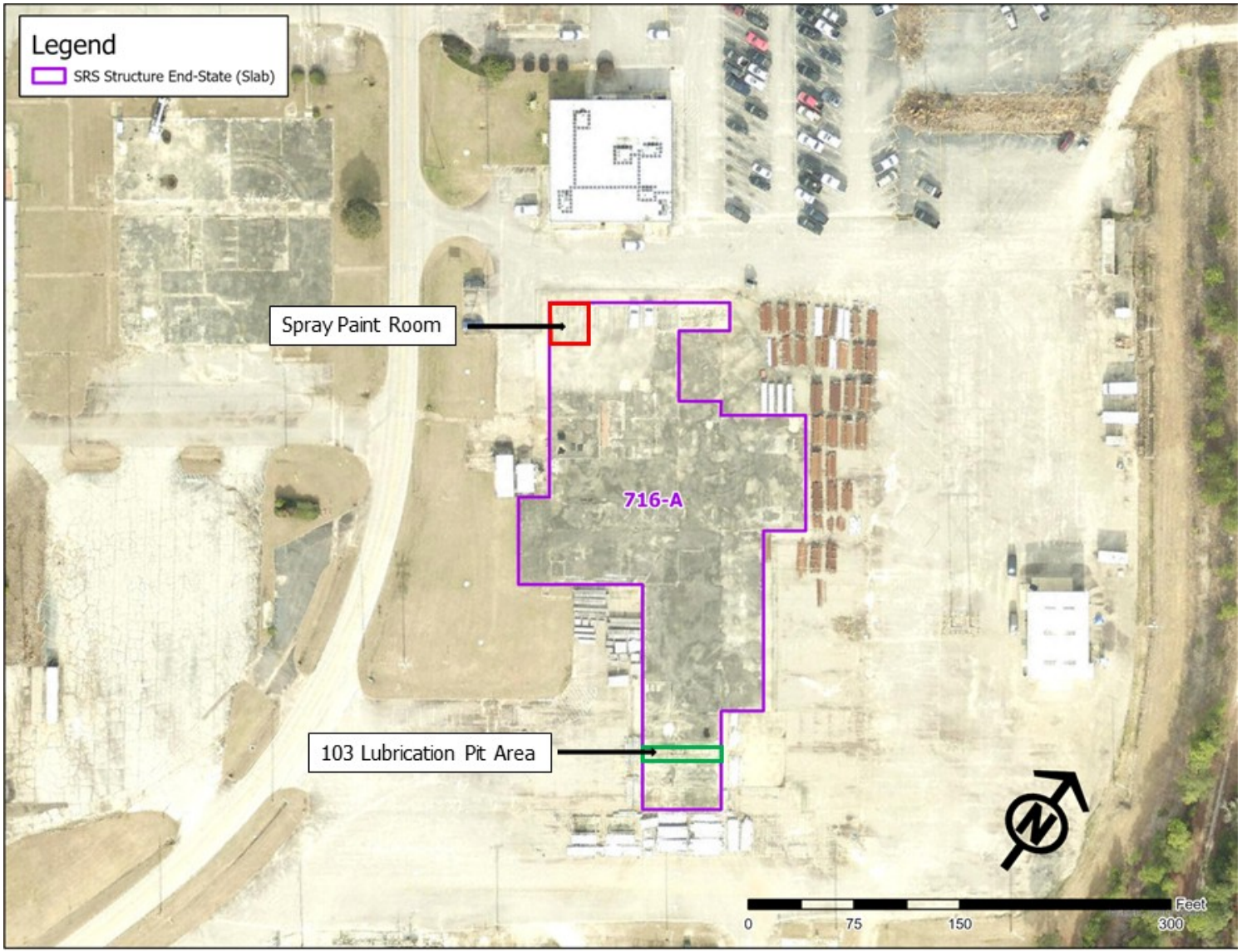

Figure 3. Location of Automotive Repair Shop (716-A) OU

Figure 4. Automotive Repair Shop (716-A) OU Before Decommissioning

Figure 5. Automotive Repair Shop (716-A) OU Slab After Decommissioning

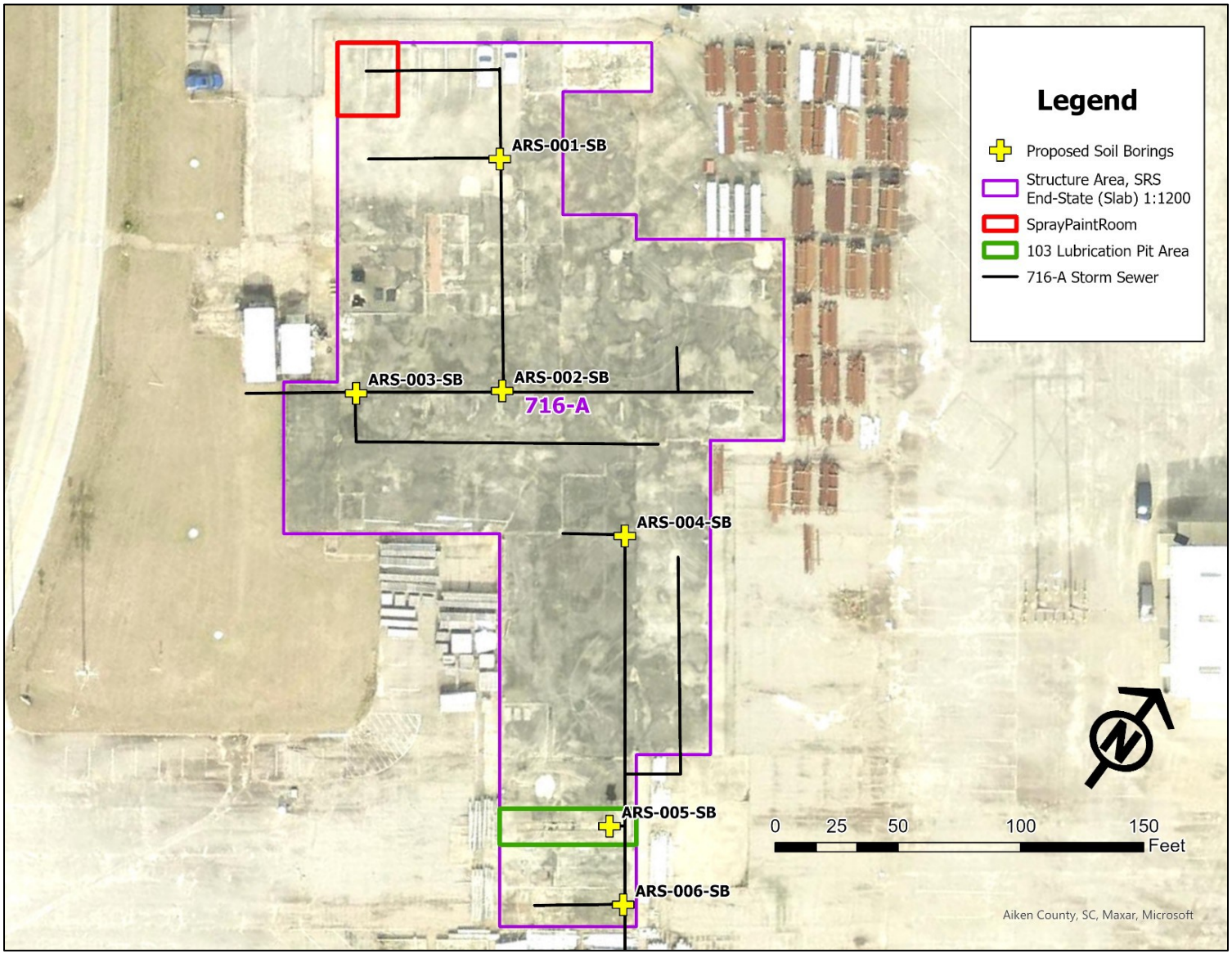

Figure 6. Soil Sampling Locations at the Automotive Repair Shop (716-A) OU

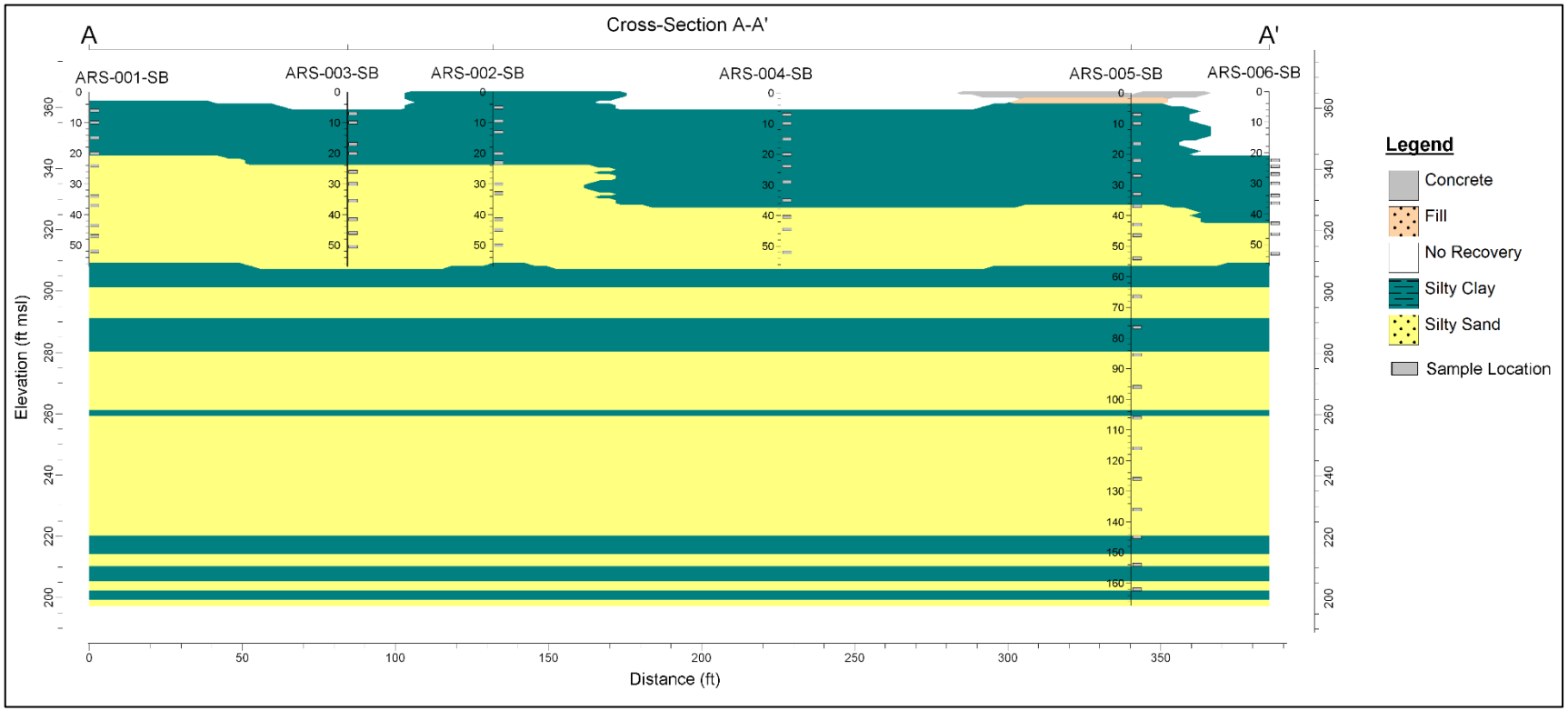

Figure 7. Automotive Repair Shop (716-A) OU Soil Cross-Section with Sample Depths

Table 1. Unit-Specific Constituents Summary Table for Soil Beneath the Automotive Repair Shop (716-A) OU

ANALYTE NAME	Units	95% UCL	Max Result[1]	Qualifier of Max	Max Location	Sample Depth (ft)	SRS 2X Mean Background[2]	Is Max Detect>2X SRS Mean Bkg?[3]
Inorganics								
ALUMINUM	mg/kg	4.82E+03	1.59E+04		ARS-005-SB	144.5	1.34E+04	Yes
ANTIMONY	mg/kg	5.20E-01	1.70E+00	J	ARS-004-SB	23.5	2.65E+00	No
ARSENIC	mg/kg	6.52E+00	2.30E+01	J	ARS-005-SB	144.5	4.45E+00	Yes
BARIUM	mg/kg	2.15E+01	4.16E+02		ARS-005-SB	115.5	3.31E+01	Yes
BERYLLIUM	mg/kg	2.62E-01	1.50E+00		ARS-005-SB	115.5	3.05E-01	Yes
CADMIUM	mg/kg	9.37E-02	1.47E-01	J	ARS-005-SB	85.0	4.44E-01	No
CALCIUM	mg/kg	2.03E+02	2.50E+03		ARS-006-SB	22.0	3.34E+02	Yes
CHROMIUM	mg/kg	1.87E+01	6.51E+01		ARS-004-SB	19.5	2.29E+01	Yes
COBALT	mg/kg	8.18E-01	1.40E+01		ARS-005-SB	115.5	1.40E+00	Yes
COPPER	mg/kg	2.26E+00	7.61E+00		ARS-005-SB	76.0	6.35E+00	Yes
IRON	mg/kg	1.65E+04	3.79E+04		ARS-003-SB	16.5	2.20E+04	Yes
LEAD	mg/kg	5.53E+00	1.66E+01		ARS-005-SB	85.0	1.08E+01	Yes
MAGNESIUM	mg/kg	6.60E+00	6.69E+02		ARS-005-SB	144.5	2.46E+02	Yes
MANGANESE	mg/kg	2.69E+01	7.53E+01		ARS-005-SB	115.5	6.33E+01	Yes
MERCURY	mg/kg	1.60E-01	9.77E-02		ARS-001-SB	5.5	6.68E-02	Yes
NICKEL	mg/kg	1.02E+00	6.40E+00		ARS-005-SB	115.5	4.15E+00	Yes
POTASSIUM	mg/kg	5.24E+01	3.82E+02		ARS-005-SB	144.5	2.13E+02	Yes
SELENIUM	mg/kg	1.24E+00	7.37E+00	J	ARS-005-SB	144.5	3.71E+00	Yes
SILVER	mg/kg	2.16E-01	1.11E+00		ARS-003-SB	16.5	6.37E-01	Yes
SODIUM	mg/kg	1.14E+00	7.42E+01		ARS-006-SB	22.0	4.36E+01	Yes
THALLIUM	mg/kg	2.60E+00	4.72E+00		ARS-004-SB	19.5	2.94E+00	Yes
VANADIUM	mg/kg	4.20E+01	1.06E+02		ARS-003-SB	16.5	5.81E+01	Yes
ZINC	mg/kg	2.00E+00	7.97E+00	J	ARS-005-SB	144.5	7.44E+00	Yes
Organics								
ACETONE	mg/kg	2.48E-03	8.76E-03		ARS-003-SB	25.5	--	Yes
BENZO[B]FLUORANTHENE	mg/kg	--	1.17E-02	J	ARS-005-SB	135.5	--	Yes
BIS(2-ETHYLHEXYL)PHTHALATE (DEHP)	mg/kg	1.13E-02	2.67E-02	J	ARS-005-SB	135.5	--	Yes
BUTYL BENZYL PHTHALATE	mg/kg	--	1.46E-02	J	ARS-005-SB	135.5	--	Yes
DICHLOROMETHANE (METHYLENE CHLORIDE)	mg/kg	--	1.89E-03	J	ARS-002-SB	29.5	--	Yes
DIETHYL PHTHALATE	mg/kg	--	1.33E-02	J	ARS-005-SB	21.5	--	Yes
DI-N-BUTYL PHTHALATE	mg/kg	1.05E-02	1.35E-02	J	ARS-005-SB	135.5	--	Yes
N-DIOCTYL PHTHALATE	mg/kg	--	1.54E-02	J	ARS-005-SB	135.5	--	Yes
TOLUENE	mg/kg	--	5.35E-04	J	ARS-002-SB	29.5	--	Yes
TRICHLOROETHYLENE (TCE)	mg/kg	--	1.20E-03		ARS-005-SB	161.5	--	Yes

Table Notes:
UCL = upper confidence level
J = estimated value
NA = not available
1 = Max = maximum detected concentration from all depth intervals
2 = Background Soils Statistical Summary report for the Savannah River Site, ERD-EN-2005-0223, Appendix B-2 (All Depth Intervals) (WSRC 2006)
3 = Constituents identified as an USC if maximum detected concentration is greater than 2X SRS Mean Concentration

Table 2. Preliminary Human Health Risk Calculation for Building 716-A Slab (Spray Paint Room Exposure Area)

Analyte	Maximum Concentration[1]	Residential Scenario					Industrial Worker Scenario				
			Noncarcinogenic		Carcinogenic			Noncarcinogenic		Carcinogenic	
		Residential Soil RSL[2]	Residential Concrete RSL[3]	Residential HQ Estimate[4]	Residential Concrete RSL[3]	Residential Risk Estimate[5]	Industrial Soil RSL[2]	Industrial Concrete RSL[3]	Industrial HQ Estimate[4]	Industrial Concrete RSL[3]	Industrial Risk Estimate[5]
Arsenic	2.82E−00	6.80E-01	--	--	6.80E+00	4.1E-07	3.00E+00	--	--	3.00E+01	9.4E-08
Barium	4.87E−01	1.50E+04	1.5E−05	3.2E-04	--	--	2.20E+05	2.2E+06	2.2E-05	--	--
Cadmium	8.47E-01	7.10E+00	7.1E−01	1.2E-02	--	--	1.00E+02	1.0E+03	8.5E-04	--	--
Chromium	8.78E−00	1.20E+05	1.2E−06	7.3E-06	--	--	1.80E+06	1.8E+07	4.9E-07	--	--
Lead	1.54E−01	2.00E+02	2.0E−03	7.7E-03	--	--	8.00E+02	8.0E+03	1.9E-03	--	--
Mercury	1.73E-02	7.10E+00	7.1E−01	2.4E-04	--	--	3.00E+01	3.0E+02	5.8E-05	--	--
Selenium	4.21E−00	3.90E+02	3.9E−03	1.1E-03	--	--	5.80E+03	5.8E+04	7.3E-05	--	--
Silver	5.20E-02	3.90E+02	3.9E−03	1.3E-05	--	--	5.80E+03	5.8E+04	9.0E-07	--	--
2-Hexanone	1.64E-02	2.00E+02	2.0E−03	8.2E-06	--	--	1.30E+03	1.3E+04	1.3E-06	--	--
Acetone	7.03E-02	7.00E+04	7.0E−05	1.0E-07	--	--	1.10E+06	1.1E+07	6.4E-09	--	--
Benzene	6.81E-04	1.20E+00	--	--	1.20E+01	5.7E-11	5.10E+00	--	--	5.10E+01	1.3E-11
Ethylbenzene	3.03E-03	5.80E+00	--	--	5.80E+01	5.2E-11	2.50E+01	--	--	2.50E+02	1.2E-11
Methyl ethyl ketone	2.88E-02	2.70E+04	2.7E−05	1.1E-07	--	--	1.90E+05	1.9E+06	1.5E-08	--	--
Methyl isobutyl ketone	1.10E-02	3.30E+04	3.3E−05	3.3E-08	--	--	1.40E+05	1.4E+06	7.9E-09	--	--
Styrene	2.57E-03	6.00E+03	6.0E−04	4.3E-08	--	--	3.50E+04	3.5E+05	7.3E-09	--	--
Toluene	4.49E−00	4.90E+03	4.9E−04	9.2E-05	--	--	4.70E+04	4.7E+05	9.6E-06	--	--
Xylenes	8.67E-03	5.80E+02	5.8E−03	1.5E-06	--	--	2.50E+03	2.5E+04	3.5E-07	--	--
			Hazard Index (HI)	2.1E-02	Cumulative Risk	4.1E-07		Hazard Index (HI)	2.9E-03	Cumulative Risk	9.4E-08

1 - Maximum detected concentration from DPFR 716-A, Automotive Repair Shop, V-PCOR-A-00043, Appendix B (WSRC 2005a).
2 - RSLs are default resident or industrial worker soil values from the *EPA Regional Screening Levels Table*, dated November 2024.
3 - RSLs for concrete media are ten times (10x) the soil RSLs.
4 - Hazard Estimate (HQ) – maximum concentration /concrete RSL concentration.
5 - Risk Estimate = (maximum concentration/concrete RSL concentration) x 1E-06.

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Table 3. Principal Threat Source Material Screening for Soil Beneath the Automotive Repair Shop (716-A) Operable Unit

Analyte Name	Exposure Point Concentration[1]	Noncarcinogenic Hazard		Carcinogenic Risk Estimate	
		Industrial RSL[2]	Industrial HQ Estimate[3]	Industrial RSL[2]	Industrial Risk Estimate[4]
ALUMINUM	1.59E+04	1.10E+06	1.45E-02	NA	--
ARSENIC	2.30E+01	4.80E+02	4.79E-02	3.00E+00	7.67E-06
BARIUM	4.16E+02	2.20E+05	1.89E-03	NA	--
BERYLLIUM	1.50E+00	2.30E+03	6.52E-04	6.90E+03	2.17E-10
CALCIUM	2.50E+03	EN	--	EN	--
CHROMIUM[5]	6.51E+01	1.00E+03	6.51E-02	2.00E+01	3.26E-06
COBALT	1.40E+01	3.50E+02	4.00E-02	1.90E+03	7.37E-09
COPPER	7.61E+00	4.70E+04	1.62E-04	NA	--
IRON	3.79E+04	8.20E+05	4.62E-02	NA	--
LEAD	1.66E+01	8.00E+02	2.08E-02	NA	--
MAGNESIUM	6.69E+02	EN	--	EN	--
MANGANESE	7.53E+01	2.60E+04	2.90E-03	NA	--
MERCURY	9.77E-02	3.00E+01	3.26E-03	NA	--
NICKEL	6.40E+00	1.70E+04	3.76E-04	6.40E+04	1.00E-10
POTASSIUM	3.82E+02	EN	--	EN	--
SELENIUM	7.37E+00	5.80E+03	1.27E-03	NA	--
SILVER	1.11E+00	5.80E+03	1.91E-04	NA	--
SODIUM	7.42E+01	EN	--	EN	--
THALLIUM	4.72E+00	1.20E+01	3.93E-01	NA	--
VANADIUM	1.06E+02	5.80E+03	1.83E-02	NA	--
ZINC	7.97E+00	3.50E+05	2.28E-05	NA	--
ACETONE	8.76E-03	1.10E+06	7.96E-09	NA	--
BENZO[B]FLUORANTHENE	1.17E-02	NA	--	2.10E+01	5.57E-10
BIS(2-ETHYLHEXYL)PHTHALATE (DEHP)	2.67E-02	1.60E+04	1.67E-06	1.60E+02	1.67E-10
BUTYL BENZYL PHTHALATE	1.46E-02	1.60E+05	9.13E-08	1.20E+03	1.22E-11
DICHLOROMETHANE (METHYLENE CHLORIDE)	1.89E-03	3.20E+03	5.91E-07	1.00E+03	1.89E-12
DIETHYL PHTHALATE	1.33E-02	6.60E+05	2.02E-08	NA	--
DI-N-BUTYL PHTHALATE	1.35E-02	8.20E+04	1.65E-07	NA	--
N-DIOCTYL PHTHALATE	1.54E-02	8.20E+03	1.88E-06	NA	--
TOLUENE	5.35E-04	4.70E+04	1.14E-08	NA	--
TRICHLOROETHYLENE (TCE)	1.20E-03	1.90E+01	6.32E-05	6.00E+00	2.00E-10
		Hazard Index	6.57E-01	Cumulative Risk	1.09E-05
		PTSM?[6]	no	PTSM?[7]	no

1 - EPC - Exposure Point Concentration = maximum detected concentration from soil media (all depths).
2 - Nonradiological RSLS are industrial soil default values from the generic USEPA Regional Screening Levels (RSLs) Table, dated November 2024.
3 - Industrial Hazard Estimate = EPC/RSL
4 - Industrial Risk Estimate = (EPC/[RSL or PRG])*1E-06
5 - RSL for hexavalent chromium (most conservative) used.
6 - Waste unit potentially has PTSM if HI ≥ 10 for noncarcinogenic constituents.
7 - Waste unit potentially has PTSM if cumulative risk ≥ 1E-03 for carcinogenic constituents.

EN - essential nutrient
NA - not available

Table 4. Contaminant Migration Screening for Soils Beneath the Automotive Repair Shop (716-A) Operable Unit

Analyte	Source Zone Concentration	Tier I Source-Specific SSL	Tier I Mass Limit SSL	Failing Analytes
	[mg/kg]			
Aluminum	4.82E+03	3.91E+05	3.66E+01	
Arsenic, Inorganic	6.52E+00	2.93E+01	1.83E-02	
Barium	2.15E+01	7.49E+02	3.66E+00	
Beryllium and compounds	2.62E-01	6.17E+01	7.32E-03	
Calcium	2.03E+02	NA	NA	
Chromium, Total	1.87E+01	1.37E+03	1.83E-01	
Cobalt	8.18E-01	8.22E+00	1.10E-02	
Copper, Total	2.26E+00	1.53E+03	2.38E+00	
Iron	1.65E+04	8.21E+04	2.56E+01	
Lead and compounds	5.53E+00	1.03E+03	2.75E-02	
Magnesium	6.60E+00	NA	NA	
Manganese	2.69E+01	9.25E+02	7.87E-01	
Mercury (elemental)	1.60E-01	3.52E+01	3.66E-03	
Nickel Soluble Salts	1.02E+00	1.42E+02	7.14E-01	
Potassium	5.24E+01	NA	NA	
Selenium	1.24E+00	9.77E+02	9.15E-02	
Silver	2.16E-01	1.66E+02	1.72E-01	
Sodium, total recoverable	1.14E+00	NA	NA	
Thallium Soluble Salts	2.60E+00	2.78E+00	3.66E-03	
Vanadium, total recoverable	4.20E+01	1.68E+03	1.57E-01	
Zinc (metallic)	2.00E+00	2.95E+03	1.10E+01	
Acetone	2.48E-03	5.90E+01	3.30E+01	
Benzo(b)fluoranthene	1.17E-02	1.20E+01	4.58E-04	
Bis(2-ethylhexyl) phthalate	1.13E-02	2.60E+01	1.10E-02	
Butylbenzyl phthalate	1.46E-02	1.88E+01	6.41E-02	
Dichloromethane (Methylene chloride)	1.89E-03	1.88E-02	9.15E-03	
Diethyl phthalate	1.33E-02	1.86E+02	5.31E+01	
Di-n-butyl phthalate	1.05E-02	5.81E+01	1.65E+00	
Di-n-octyl phthalate	1.54E-02	NA	NA	
Toluene	5.35E-04	9.19E+00	1.83E+00	
Trichloroethylene	1.20E-03	5.25E-02	9.15E-03	

SSL - soil screening level
mg/kg - milligram per kilogram
NA - not applicable