**Department of Energy**
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

NOV 2 1 2024

Ms. Susan B. Fulmer, P. G., Manager
Federal Remediation Section
Division of Site Assessment, Remediation and Revitalization
Bureau of Land and Waste Management
South Carolina Department of Environmental Services
2600 Bull Street
Columbia, South Carolina 29201

Mr. Jon Richards
Savannah River Site Remedial Project Manager
Superfund and Emergency Management Division
U. S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303

Dear Ms. Fulmer and Mr. Richards:

SUBJECT: Savannah River Site's Responses to the Regulatory Comments on the Performance Evaluation Report for the A-Area Burning/Rubble Pits (731-A, -1A) and Rubble Pit (731-2A) and the Miscellaneous Chemical Basin/Metals Burning Pit (731-4A, -5A) Operable Unit - January through December 2023 (U) (SRNS-RP-2024-00115, Revision 0, May 2024) SEMS Number: 28

In accordance with the terms of the Federal Facility Agreement, the U.S. Department of Energy (DOE) is submitting the subject comment responses for your review and approval. The U.S. Environmental Protection Agency (EPA) and South Carolina Department of Environmental Services (SCDES) provided comments on the report on August 27, 2024, and September 4, 2024, respectively. This performance evaluation report (PER) will not be revised; however, all comment responses will be included in the next scheduled PER, as applicable. Please review these responses and provide your approval within thirty (30) days from receipt. The time and effort that the SCDES and the EPA have given on the subject operable unit are appreciated.

Questions from you or your staff may be directed to me at (803) 952-7505, or the DOE Operable Unit Manager, Mr. Charles Bryan, at (803) 952-7871.

Sincerely,

AVERY HAMMETT Digitally signed by AVERY HAMMETT
Date: 2024.11.21 10:25:26 -05'00'

Avery G. Hammett
FFA Project Manager, DOE-Savannah River Operations Office
Remediation, Deactivation, and Decommissioning Division

RDDD-25-108

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Enclosures:
1. SRS Responses to the U. S. Environmental Protection Agency's Comments on the Performance Evaluation Report for the A-Area Burning/Rubble Pits (731-A, -1A) and Rubble Pit (731-2A) and the Miscellaneous Chemical Basin/Metals Burning Pit (731-4A, -5A) Operable Unit - January through December 2023 (U) (SRNS-RP-2024-00115, Revision 0, May 2024) SEMS Number: 28
2. SRS Responses to the South Carolina Department of Environmental Services' Comment on the Performance Evaluation Report for the A-Area Burning/Rubble Pits (731-A, -1A) and Rubble Pit (731-2A) and the Miscellaneous Chemical Basin/Metals Burning Pit (731-4A, -5A) Operable Unit - January through December 2023 (U) (SRNS-RP-2024-00115, Revision 0, May 2024) SEMS Number: 28

cc w/o encl:
M. Reece, SCDES-Columbia
H. J. Porter, SCDES-Columbia
J. Blalock, SCDES-Columbia
S. French, SCDES-Columbia
G. R. Stewart, SCDES-Columbia
G. K. Taylor, SCDES-Columbia
T. R. Fuss, SCDES-Midlands Aiken Environmental Affairs Office
G. O'Quinn, SCDES-Midlands Aiken Environmental Affairs Office
E. G. Downing, SCDES-Midlands Aiken Environmental Affairs Office
H. L. Herlong, SCDES-Midlands Aiken Environmental Affairs Office

cc w/ encl:
H. Cathcart, SCDES-Columbia
B. Martin, EPA-Atlanta
M. McRae, TechLaw, Inc.

SRS Responses to U.S Environmental Protection Agency Comments on the Performance Evaluation Report for the A-Area Burning/Rubble Pits (731-A, -1A) and Rubble Pit (731-2A) and the Miscellaneous Chemical Basin/Metals Burning Pit (731-4A, -5A) Operable Unit – January through December 2023 (U), SEMS Number: 28 (SRNS-RP-2024-00115, Revision 0, May 2024)



Comments received 08/27/2024

**EPA General Comment**

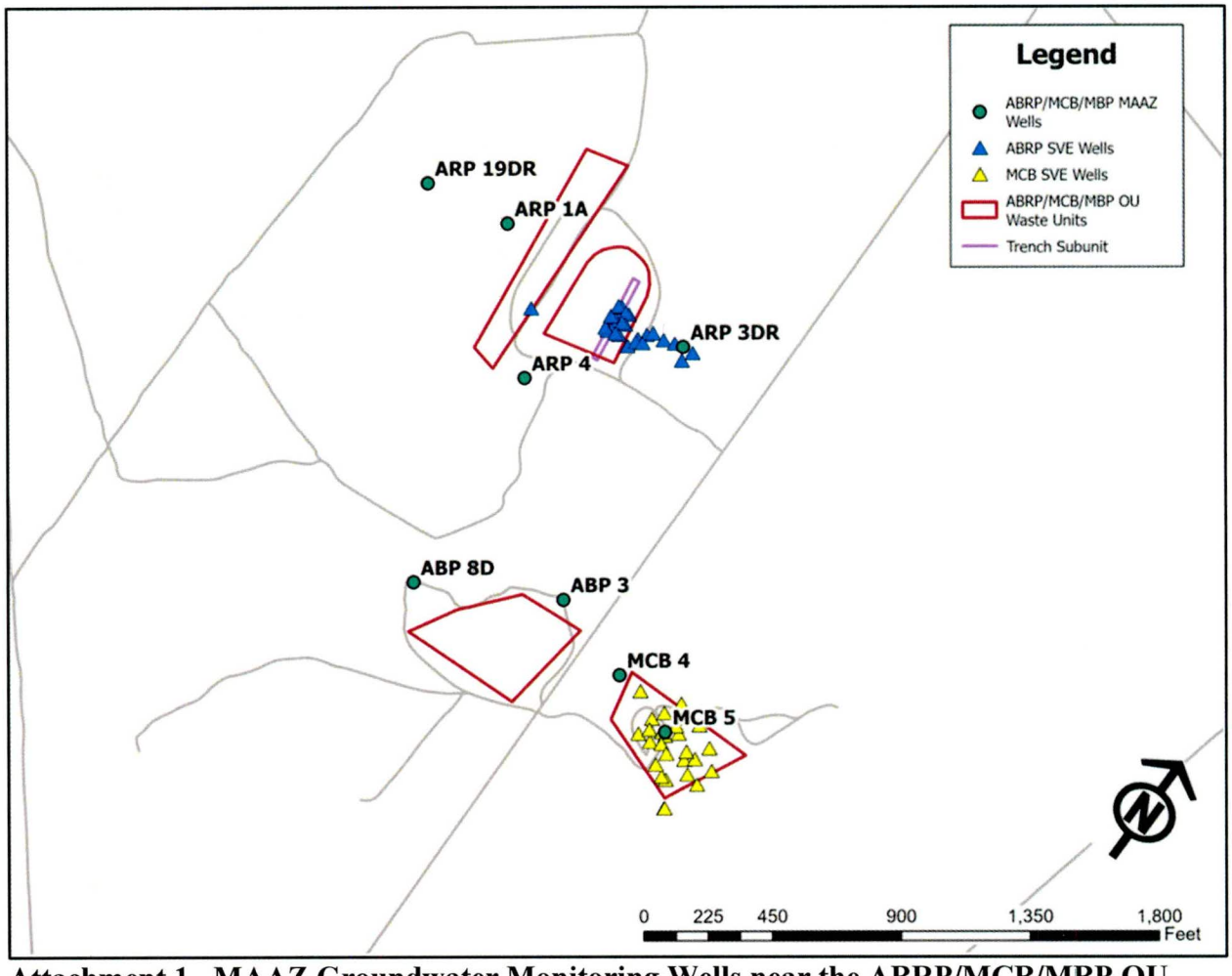
1. A figure depicting the locations of the M-Area Aquifer Zone (MAAZ) monitoring wells was not presented in the PER and the assertions in the text regarding contaminant concentrations and trends could not be evaluated. The PER discusses the monitoring wells screened in the water table aquifer MAAZ near the A-Area Burning/Rubble Pits and Rubble Pit (ABRP) and Miscellaneous Chemical Basin (MCB) source areas and indicates the wells have historically shown elevated levels of tetrachloroethylene (PCE) and trichloroethylene (TCE) contamination. The text also indicates MAAZ wells near the ABRP source have decreasing volatile organic compound (VOC) trends indicating mass depletion of the source; however, a figure depicting the locations of the MAAZ monitoring wells was not provided. While it is understood groundwater is not part of the ABRP/MCB/Metals Burning Pit (MBP) Operable Unit (OU), a figure depicting the monitoring wells discussed in the PER should be provided or a reference to where this information can be found should be provided. Please revise the PER to provide a figure depicting the monitoring wells discussed in the PER or provide a reference to where this information can be found.

**Response: Agree with Clarification.**

**The media of concern for ABRP/MCB/MBP OU are surface and vadose zone soils. Groundwater is not part of the ABRP/MCB/MBP OU, and groundwater monitoring and corrective action are addressed under the RCRA Corrective Action Program per Core Team Agreement. The Annual 2023 M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities Groundwater Monitoring and Corrective Action Report (U) (SRNS-RP-2023-01452, March 2024) is the current groundwater report that discusses the MAAZ wells. The groundwater monitoring and corrective action report is published annually in March. A reference to the most recent report will be included in the next PER.**

**As an example, the reference for the 2023 groundwater monitoring and corrective action report is listed below.**

**SRNS, 2024. Annual 2023 M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities Groundwater Monitoring and Corrective Action Report (U), SRNS-RP-2023-01452, March 2024, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC**




**Attachment 1. MAAZ Groundwater Monitoring Wells near the ABRP/MCB/MBP OU**

**No change to the current report is proposed.**

**Responsible Party: Bryce Garner, (803)952-7801, bryce.garner@srs.gov**

**EPA Specific Comments**

1. **Section 1.3, Groundwater, Pages 2 and 3 of 54 and Table 1**, ABRP/MCB/MBP OU Subunit Remedial Actions and Regulatory Decision Documents, Pages 30 and 31 of 54: The information in Section 1.3 and Table 1 indicates TCE concentrations will be below the maximum contaminant level (MCL) in the near future in two of eight MAAZ wells where

TCE exceeded the MCL; however, there is no information (e.g., concentration trend data) presented as a supporting line of evidence that these concentrations will be below the MCL in the near future. Therefore, the effectiveness of the vadose zone remedial action (RA) on reducing TCE concentrations in the MAAZ is unclear. While it is understood groundwater is not part of the ABRP/MCB/MBP OU, the text should provide reference to where this information can be found in order to support the assertions in the text. Please revise the text to provide a reference to where the additional information can be found (e.g., concentration trend data) regarding the TCE results for the two MAAZ wells located near the ABRP subunit source, in order to support the assertions regarding the vadose zone RA effectiveness.

**Response: Agree.**

**The concentration trend data is reported in the Annual 2023 M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities Groundwater Monitoring and Corrective Action Report (U) (SRNS-RP-2023-01452, March 2024). The groundwater monitoring and corrective action report is published annually in March. A reference to the most recent report will be included in the next PER.**

**As an example, the reference for the 2023 groundwater monitoring and corrective action report is listed below.**

**SRNS, 2024. Annual 2023 M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities Groundwater Monitoring and Corrective Action Report (U), SRNS-RP-2023-01452, March 2024, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC**

**No change to the current report is proposed.**

**Responsible Party: Bryce Garner, (803)952-7801, bryce.garner@srs.gov**

2. **Section 2.1.3, Current Configuration, Page 5 of 54:** The text states that wells AHT007A and AHT009A are associated with the Ash Pile Subunit; however, these wells appear to be specifically located in the ABRP Trench Subunit (see Figure 5, ABRP Vadose Zone Well Configuration and Treatment Area). Please revise the text to identify the specific wells located within the Ash Pile Subunit and the ABRP Trench Subunit.

**Response: Agree with Clarification.**

**The wells AHT007A and AHT009A were installed within the Trench Subunit in 2008 with the other AHT wells as per the ROD (WSRC 2007) for the selected alternative for the Trench Subunit. Soil Vapor Extraction (SVE) is the selected remedial action for the Trench Subunit only. All 26 SVE wells in the current configuration are associated with the Trench Subunit and all other associations will be removed. Section 2.1.3 in the next PER will be revised as follows:**

**The ABRP RA operated only PSVE systems in 2023. The current PSVE system uses 26 wells consisting of 13 wells equipped with MicroBlowers™ powered by photovoltaic units and 13 wells equipped with passive BaroBalls™. Construction details for the SVE wells are shown in Table 3. The well locations are shown in Figure 5. ~~and are in the following subunits:~~**

- ~~**ABRP Trench Subunit – Three wells (AHT-05, -06 and ASH-06). The ABRP Trench is 4.6-meters (m [15-feet {ft}]) wide by 91.4-m (300-ft) long and between 2.4-m and 4.6-m (8- to 15-ft) deep, most of which is overlain by about 6.1 m (20 ft) of compacted ash.**~~
- ~~**Ash Pile Subunit – Twelve wells (AHT-7A, -7B through AHT-12A, -12B) clustered in sets of two.**~~
- ~~**Potential Pit Subunit – Ten single wells (ABV-01, ARV-1D1, -2D1, -2D2, and -2D3, and AHT-13 through AHT-17) along the northern, cleared edge in an east to west orientation. Rubble Pit Subunit – One well (ARV-3D3).**~~

**No change to the current report is proposed.**

**Responsible Party: Bryce Garner, (803)952-7801, bryce.garner@srs.gov**

3. **Section 2.1.4, Sampling Methods and Results, Page 5 of 54 and Section 2.2.4, PSVE Results, Page 8 of 54:** It is unclear why average TCE results are used for comparison of historic results in ABRP MicroBlower™ and BaroBall™ wells at the MCB when the maximum TCE and PCE concentrations are used for comparison of historical results in MicroBlower™ and BaroBall™ wells located at the miscellaneous chemical basin (MCB). For example, the table in Section 2.1.4 presents the average TCE sample results for

comparison of historic (2007) with current 2023 results for MicroBlower™ and BaroBall™ wells at the ABRP; however, the table in Section 2.2.4 presents the maximum TCE and PCE sample results for comparison of historic (before 2009) with current 2023 results for MicroBlower™ and BaroBall™ wells at the MCB. Please revise the PER to present average and maximum exhaust gas results for both ABRP and MCB subunits.

**Response: Agree.**

**A table will be added to Section 2.1.4 in the next PER to present average and maximum exhaust gas results for ABRP at wells with detectable results. The table in Section 2.1.4 will be modified similar to MCB as shown below:**

ABRP

| Well | TCE *(ppmV)* | |
|---|---|---|
| | Average Exhaust Gas Concentration | Maximum Exhaust Gas Concentration |
| ASH-06 | 0.584 | 3.383 in 2018 |
| AHT007B | 0.085 | 0.171 in 2018 |
| AHT008B | 0.065 | 0.273 in 2018 |

MCB

| Well | TCE *(ppmV)* | | PCE *(ppmV)* | |
|---|---|---|---|---|
| | Average Exhaust Gas Concentration | Maximum Exhaust Gas Concentration | Average Exhaust Gas Concentration | Maximum Exhaust Gas Concentration |
| MCSV-07 | 0.626 | 1.153 in 2017 | 0.730 | 1.81 in 2021 |
| MCSV-17 | 0.787 | 1.734 in 2011 | 0.035 | 0.435 in 2018 |
| MCSV-25 | 0.227 | 1.228 in 2011 | 0.030 | 0.087 in 2011 |
| MCSV-27 | 0.211 | 1.122 in 2011 | 0.030 | 0.072 in 2011 |

Comments received 08/27/2024

**No change to the current report is proposed.**

**Responsible Party: Bryce Garner, (803) 952-7801, bryce.garner@srs.gov**

SRS Response to South Carolina Department of Environmental Services
Comment on the
Performance Evaluation Report for the A-Area Burning/Rubble Pits (731-A, -1A) and Rubble Pit (731-2A) and the Miscellaneous Chemical Basin/Metals Burning Pit (731-4A, -5A) Operable Unit – January through December 2023 (U), SEMS Number: 28
(SRNS-RP-2024-00115, Revision 0, May 2024)



Comments received 09/04/2024

**SCDES Specific Comment**

1. Table 3, ABRP Well Construction Details, pages 33 and 34. This table lists 30 wells that were installed for a sparging system in 2001. Five of these wells (ARV-1D1, -2D1, -2D2, -2D3 and -3D3) are used in the current configuration of the SVE operating system at ABRP; however, the remaining 25 wells are not discussed anywhere in the document. Please include either a footnote for this table explaining the history and current status of these 25 wells or provide a brief discussion of these wells in the document.

   **Response: Agree.**

   **The 25 unused sparge wells have not been used after air sparging was discontinued in 2003 and are scheduled for abandonment. A footnote will be added to Table 3 and the table will be revised accordingly. No change to the current report is proposed. Table 3, ABRP Well Construction Details, will be revised in the next PER as follows:**

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Comment on the
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Comments received 09/04/2024

**Table 3. ABRP Well Construction Details**

| Well ID | East Coordinate (UTM) | North Coordinate (UTM) | Ground Surface | Screen Top | Screen Bottom | Screen Length |
|---|---|---|---|---|---|---|
| | | | *(ft amsl)* | *(ft bgs)* | | *(ft)* |
| ***Installed for Final RA in 2008*** | | | | | | |
| AHT-7A | 431,024.385 | 3,686,483.710 | 357.04 | 82.2 | 102.2 | 20 |
| AHT-7B | 431,020.836 | 3,686,484.858 | 357.43 | 45.7 | 70.7 | 25 |
| AHT-8A | 431,021.492 | 3,686,499.696 | 357.42 | 82.8 | 102.8 | 20 |
| AHT-8B | 431,018.533 | 3,686,498.220 | 357.69 | 45.4 | 70.4 | 25 |
| AHT-9A | 431,022.143 | 3,686,512.833 | 357.29 | 82.6 | 102.6 | 20 |
| AHT-9B | 431,019.003 | 3,686,511.452 | 357.52 | 46.0 | 71.0 | 25 |
| AHT-10A | 431,033.003 | 3,686,510.600 | 355.79 | 81.0 | 121.0 | 40 |
| AHT10B | 431,029.389 | 3,686,510.231 | 356.16 | 30.4 | 70.4 | 40 |
| AHT-11A | 431,036.050 | 3,686,499.890 | 355.39 | 80.4 | 120.4 | 40 |
| AHT-11B | 431,032.284 | 3,686,499.523 | 356.04 | 30.6 | 70.6 | 40 |
| AHT-12A | 431,036.846 | 3,686,486.939 | 355.81 | 80.4 | 120.4 | 40 |
| AHT-12B | 431,033.168 | 3,686,486.297 | 356.06 | 30.4 | 70.4 | 40 |
| AHT-13 | 431,061.061 | 3,686,504.415 | 340.63 | 79.9 | 109.9 | 30 |
| AHT-14 | 431,065.313 | 3,686,509.809 | 340.19 | 80.1 | 115.1 | 35 |
| AHT-15 | 431,078.882 | 3,686,510.377 | 338.72 | 74.7 | 119.7 | 45 |
| AHT-16 | 431,090.604 | 3,686,514.312 | 337.64 | 80.0 | 120.0 | 40 |
| AHT-17 | 431,111.851 | 3,686,517.379 | 335.95 | 95.0 | 120.0 | 25 |
| ***Installed for Interim RA in 2003*** | | | | | | |
| ABV-01 | 431,051.581 | 3,686,482.763 | 340.7 | 73 | 123 | 50 |
| ASH-06 | 431,022.923 | 3,686,495.167 | 360.7 | 40 | 140 | 100 |
| AHT-05 – upper screen | 431,026.137 | 3,686,505.643 | 359.3 | 50 | 70 | 20 |
| – middle screen | | | | 90 | 100 | 10 |
| – lower screen | | | | 120 | 140 | 20 |
| AHT-06 – upper screen | 431,027.323 | 3,686,486.373 | 361.2 | 45 | 80 | 35 |
| – middle screen | | | | 95 | 105 | 10 |
| – lower screen | | | | 120 | 125 | 5 |
| ***Installed for Sparging System in 2001*** | | | | | | |
| ARV-1D1 | 431,107.28 | 3,686,504.15 | 337.99 | 97.05 | 117.12 | 20.07 |
| ARV-1D2* | 431,106.85 | 3,686,499.89 | 337.96 | 96.60 | 116.50 | 19.90 |
| ARV-1D3* | 431,112.66 | 3,686,503.08 | 337.44 | 93.70 | 133.80 | 40.10 |
| ARV-2D1 | 431,055.82 | 3,686,495.32 | 340.79 | 97.00 | 107.12 | 10.12 |

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Comments received 09/04/2024

**Table 3. ABRP Well Construction Details** *(Continued/End)*

| Well ID | East Coordinate (UTM) | North Coordinate (UTM) | Ground Surface | Screen Top | Screen Bottom | Screen Length |
|---|---|---|---|---|---|---|
| | | | *(ft amsl)* | *(ft bgs)* | | *(ft)* |
| ARV-2D2 | 431,055.97 | 3,686,491.45 | 340.66 | 97.00 | 117.08 | 20.08 |
| ARV-2D3 | 431,062.53 | 3,686,494.61 | 340.25 | 106.96 | 117.00 | 10.04 |
| ARV-3D1* | 430,948.38 | 3,686,457.29 | 350.44 | 100.88 | 121.00 | 20.12 |
| ARV-3D2* | 430,947.90 | 3,686,453.26 | 350.49 | 101.00 | 111.11 | 10.11 |
| ARV-3D3 | 430,944.96 | 3,686,454.78 | 350.72 | 105.00 | 115.06 | 10.06 |
| ARV-4D1* | 430,946.09 | 3,686,501.62 | 350.00 | 106.75 | 126.87 | 20.12 |
| ARV-4D2* | 430,946.22 | 3,686,497.46 | 349.94 | 115.24 | 125.29 | 10.05 |
| ARV-4D3* | 430,943.01 | 3,686,498.91 | 350.28 | 115.00 | 125.04 | 10.04 |
| ARV-5D1* | 430,943.05 | 3,686,557.91 | 349.35 | 110.00 | 130.08 | 20.08 |
| ARV-5D2* | 430,944.24 | 3,686,553.81 | 349.18 | 110.00 | 130.12 | 20.12 |
| ARV-5D3* | 430,940.69 | 3,686,554.81 | 349.61 | 113.50 | 143.68 | 30.18 |
| ARV-6D1* | 430,946.95 | 3,686,483.83 | 350.18 | 110.00 | 130.14 | 20.14 |
| ARV-6D2* | 430,946.75 | 3,686,479.48 | 350.25 | 110.25 | 130.39 | 20.14 |
| ARV-6D3* | 430,943.31 | 3,686,482.38 | 350.33 | 106.00 | 126.18 | 20.18 |
| ARV-7D1* | 430,944.63 | 3,686,533.01 | 349.62 | 107.00 | 117.12 | 10.12 |
| ARV-7D2* | 430,943.83 | 3,686,528.32 | 349.91 | 115.45 | 125.60 | 10.15 |
| ARV-7D3* | 430,941.18 | 3,686,530.50 | 350.07 | 115.00 | 125.05 | 10.05 |
| ARV-8D1* | 430,903.32 | 3,686,462.86 | 350.65 | 108.00 | 128.10 | 20.10 |
| ARV-8D2* | 430,902.72 | 3,686,461.02 | 350.66 | 112.00 | 132.13 | 20.13 |
| ARV-8D3* | 430,896.44 | 3,686,463.66 | 350.35 | 114.50 | 144.70 | 30.20 |
| ARV-9D1* | 430,901.07 | 3,686,492.47 | 349.71 | 112.00 | 132.12 | 20.12 |
| ARV-9D2* | 430,901.09 | 3,686,496.75 | 349.45 | 112.00 | 132.14 | 20.14 |
| ARV-9D3* | 430,893.65 | 3,686,493.31 | 350.29 | 112.00 | 132.12 | 20.12 |
| ARV-10D1* | 430,896.57 | 3,686,530.10 | 348.64 | 107.00 | 127.12 | 20.12 |
| ARV-10D2* | 430,896.27 | 3,686,534.61 | 348.64 | 107.00 | 127.12 | 20.12 |
| ARV-10D3* | 430,889.35 | 3,686,530.87 | 349.54 | 106.59 | 126.71 | 20.12 |

* – **No longer in use and will be abandoned**
amsl – above sea level
bgs – below ground surface
ft – feet
ABV – A-Area Burning/Rubble Pit Vadose Zone
AHT – A-Area Hidden Trench
ARV – A-Area Recovery Vapor
UTM – Universal Transverse Mercator

**Responsible Party: Bryce Garner, (803)952-7801, bryce.garner@srs.gov**