Department of Energy
Savannah River Operations Office
P.O. Box A
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ARF-024905

MAR 1 1 2025

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 Effectiveness Monitoring Report for the Monitored Natural Attenuation (MNA) at the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) (U) April 2023 through March 2024 (SRNS-RP-2024-00606, Revision 0, July 2024) SEMS Number: 24

In accordance with the terms of the Federal Facility Agreement (FFA), the U.S. Department of Energy (DOE) is submitting the subject comment responses for your review. The U.S. Environmental Protection Agency's (EPA) and South Carolina Department of Environmental Services' (SCDES) comments were received on September 4, 2024, and November 13, 2024, respectively. This report will not be revised; however, all comment responses will be included in the next report, as applicable. Please review the enclosures and provide your approval within thirty (30) days from receipt. The effort and time that the EPA and the SCDES have provided on this operable unit are greatly appreciated.

Questions from you or your staff may be directed to me at (803) 952-6211, or the DOE Operable Unit Manager, April Coffman, at (803) 952-7244.

Sincerely,

MATTHEW BAKER

Digitally signed by MATTHEW BAKER
Date: 2025.03.11 09:49:30 -04'00'

Matthew R. Baker
Acting FFA Remedial Project Manager
DOE-Savannah River Operations Office
Remediation, Deactivation, and Decommissioning Division

RDDD-25-124

Enclosures:
1. SRS Responses to the South Carolina Department of Environmental Services' Comments on the Effectiveness Monitoring Report for the Monitored Natural Attenuation (MNA) at the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) (U) April 2023 through March 2024 (SRNS-RP-2024-00606, Revision 0, July 2024) SEMS Number: 24
2. SRS Responses to the U.S. Environmental Protection Agency's Comments on the Effectiveness Monitoring Report for the Monitored Natural Attenuation (MNA) at the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) (U) April 2023 through March 2024 (SRNS-RP-2024-00606, Revision 0, July 2024) SEMS Number: 24

cc w/o encl:
M. Reece, SCDES-Columbia
H. J. Porter, SCDES-Columbia
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cc w/ encl:
H. H. Cathcart, SCDES-Columbia
M. McRae, TechLaw, Inc.

SPECIFIC COMMENTS

1. Section 1.4, Observed Hydrology at the CMP Pits OU, page 7. Table 2 includes horizontal groundwater flow velocity calculations for a flow path B-B' in the Gordon Aquifer (GA). This GA flow path is not listed along with A-A' on this page. Please include.

   Response: Agree/Clarification

   The text in section 1.4, Observed Hydrology will be updated in future reports to also list a B-B' flow path for the GA, as applicable. No changes to the July 2024 EMR are proposed.

   Contact: Ashley Shull (803)952-7090 ashley.shull@srs.gov

2. Section 1.4, Observed Hydrology at the CMP Pits OU, page 8. The first complete sentence on this page states that values of 35 ft/day and 25% were used for the hydraulic conductivity constant and porosity values, respectively, for the GA horizontal groundwater linear velocity calculations. Table 2, however, lists values of 20 ft/day and 30%, and the resulting calculated horizontal groundwater flow velocities indicate that these were the values used in the calculations. Please correct this discrepancy.

   Response: Agree/Clarification

   Table 2 was mistakenly not updated in the July 2024 EMR. Provided below is the 2Q2023 Horizontal Groundwater Flow Velocities which use the correct values of 35 ft/day and 25% for the hydraulic conductivity constant and porosity values, respectively. Future reports will ensure the correct horizontal velocities are listed in the text in section 1.4, Observed Hydrology and are consistent with the values presented in Table 2. No changes to the July 2024 EMR are proposed.

Updated Table 2. CMP Pits OU Horizontal Groundwater Flow Velocities (2Q2023)

GW Flow Line	dh	dl	Conductivity	Porosity	Velocity (ft/day)	Velocity (ft/year)
TZ						
A - A'	20	1474	8	0.3	**0.36**	132.16
B - B'	20.8	1484	8	0.3	**0.37**	136.52
C - C'	5	1180	8	0.3	**0.11**	41.27
				TZ Avg.	**0.28**	**103.32**
MAZ						
A - A'	15	1609	50	0.3	**1.55**	567.51
B - B'	15	1302	50	0.3	**1.92**	701.32
				MAZ Avg.	**1.74**	**634.42**
LAZ						
A - A'	4.2	1994	30	0.3	**0.21**	76.93
B - B'	3	374	30	0.3	**0.80**	292.98
C - C'	7.5	538	30	0.3	**1.39**	509.18
D - D'	4.13	1156	30	0.3	**0.36**	130.49
				LAZ Avg.	**0.69**	**252.40**
GA						
A - A'	2	1792	35	0.25	**0.16**	**57.07**
B - B'	2.1	1015	35	0.25	**0.29**	**105.80**
				GA Avg.	**0.22**	**81.43**

dh= difference in head; dl= difference in length

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3. Section 2.2.2.2, PCE and TCE, page 12. The last sentence of the paragraph at the top of this page states that 20 wells had TCE concentrations greater than the MCL during the 2023 groundwater sampling. According to Table 3, a total of 24 wells had TCE concentrations above the MCL. Please correct.

Response: Agree/Clarification

The sentence should have stated 24 wells exceeded the TCE MCL, not 20 wells. Future reports will ensure the information presented in the text and Table 3 are consistent. No changes to the July 2024 EMR are proposed.

Contact: Ashley Shull (803)952-7090 ashley.shull@srs.gov

GENERAL COMMENTS

1. Section 2.2.2 (Groundwater Sampling Results) indicates that the data collected is verified and unvalidated (VU); however, it is unclear whether this was the data validation method selected in the applicable regulatory reviewed quality assurance project plan (QAPP) or corresponding applicable work plan. All data should undergo data validation. *Please clarify whether data validation was not required under the applicable QAPP and please recommend future data be validated, if not.*

   Response: Clarification

   Data reported in the Effectiveness Monitoring Report (EMR) are collected and analyzed in accordance with the CMP Pits Effectiveness Monitoring Plan (EMP) (WSRC-RP-2005-4077, Rev 1, Feb 2006) which identified that the acceptable data quality level for routine monitoring will be verified (i.e., VU) and not validated. The CMP Pits EMRs will continue to identify the data quality level that was used for the reported data. No changes to the July 2024 EMR are proposed.

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2. It is unclear whether any quality control (QC) samples (i.e., field duplicates, matrix spike matrix spike duplicates [MS/MSD]) are collected, as the EMR does not specify this. QC samples should be collected at an appropriate rate (i.e., one per 10 normal samples) in order to verify sample results. *Please discuss any QC measures that were taken, or recommend future sampling be inclusive of QC samples.*

   Response: Agree/Clarification

   For the April 2023 through March 2024 samples at the CMP Pits OU, neither field duplicate nor split quality control (QC) samples were collected as the CMP Pits EMP (WSRC-RP-2005-4077, Rev 1, Feb 2006) did not require them and specified VU data quality acceptable for routine monitoring. However, SRS uses accredited/certified labs that perform quality assurance (QA)/QC checks as required by laboratory QA/QC protocols, analytical methods and Savannah River Site *Area Completion Projects Quality Assurance Project Plan for Environmental Data Collection and Management* (ERD-AG-2005-00001). This includes matrix spike/matrix spike duplicates (MS/MSD), as well as lab control samples (LCS), lab control sample duplicates (LCSD), method blanks (MB), and/or lab duplicates (LD). The sample results are reviewed, and qualifiers are assigned by the labs based on these lab QA/QC results. Analytical data utilized for the CMP Pits OU are further reviewed per Environmental Compliance and Area Completion Projects administrative procedures (e.g., WSRC-C1, *Administrative Procedures,* ER-AP-125, *Soil and Groundwater Closure Projects Quality Assurance Program).*

   In future EMRs, it will state if additional QA/QC samples (i.e., field duplicates and splits) were collected or not. If any were, they will be noted in the body of the EMR to state the number of field duplicates and/or splits that were collected and from which wells and/or surface water stations. The data will also be presented in Table 3.

No changes to the July 2024 EMR are proposed.

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3. It is unclear whether any preliminary investigation into the use of per- and polyfluoroalkyl substances (PFAS) has been conducted at the CMP Pits. Per the Historical and current usage of per- and polyfluoroalkyl substances (PFAS): A literature review, Linda G. T. Gaines, May 2022 (https://onlinelibrary.wiley.com/doi/10.1002/ajim.23362), PFAS have been used as an active and inert (or inactive) pesticide ingredient, and may also have been a component of other chemicals that were disposed in the CMP Pits. Also, at Department of Energy (DOE) sites uranium enrichment and plutonium production process areas including equipment/lubricants serve as PFAS sources since PFAS was used on an industrial scale in uranium separation activities during Manhattan Project and Cold War era operations. It is noted that any waste (chemical, metals and pesticides) disposed of at the CMP Pits that originated from an uranium enrichment and/or plutonium production process area are potentially contaminated with PFAS. Furthermore, restoration of contaminated groundwater to beneficial will not be considered complete until all potential sources of groundwater contamination are sufficiently investigated. *Please revise the text to discuss whether any preliminary investigation into PFAS use at the site has been conducted and if not, recommend sampling for PFAS analysis to be conducted during the next monitoring event.*

   Response: Agree/Clarification

   There are no disposal or excavation records that indicate that per- and polyfluoroalkyl substances (PFAS) containing chemicals or materials were disposed of at the CMP Pits. However, due to the various types of wastes that were disposed of at the pits, SRS acknowledges that older chemicals could have contained these compounds. In 4Q2023, three samples at CMP Pits from two wells (CMP011A and CMP 35D) were analyzed for PFAS analytes using method EPA 1633 for the two regular samples at each well and EPA 533 for one split sample at CMP011A. Well CMP011A is an upgradient Gordon Aquifer well that does not exhibit chlorinated solvent or lindane contamination. CMP 35D is a shallow installed well and is located directly downgradient of the CMP Pits trenches. This well shows the highest levels of chlorinated solvents (e.g., trichloroethylene and tetrachloroethylene) and lindane contamination and, therefore, would be the most likely well to display any potential PFAS contamination.

   PFAS was analyzed at CMP Pits for two reasons: 1) to test results at a recently installed well with a new bladder pump (CMP011A) to evaluate potential false positives due to the pump and tubing materials, and/or sampler cross contamination; and 2) determine if PFAS contamination was of concern at a source well (CMP 35D) where increasing levels of chlorinated solvents have been observed over the last decade.

   Both the regular and split sample results from CMP011A were non-detect for PFAS constituents. At CMP 35D, five PFAS constituents (perfluoro-n-butanoic acid [PFBA], perfluoro-3-methoxypropanoic acid [PFMPA], perfluorohexanoic acid [PFHxA], perfluorooctanesulfonic acid [PFOS], and perfluorobutanesulfonic acid [PFBS]) were detected but at very low estimated (J-qualified) concentrations less than 1 ng/L and less that the

constituents corresponding MCLs/RSLs. Table CR-EPA-1 summarizes the CMP Pits PFAS results and are included at the end of these comment responses.

The PFAS results from CMP Pits are being used in support of the ongoing SRS and regulatory evaluation of PFAS usage at SRS. Because PFAS constituents are not a constituent of concern at the CMP Pits OU, these PFAS results were not reported in the July 2024 EMR and no additional PFAS sampling at the CMP Pits OU is planned. No changes to the July 2024 EMR are proposed.

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4. It is unclear whether it is necessary to reevaluate monitored natural attenuation (MNA) as a remedy and develop contingency remedial actions (RA) in the event that MNA is not occurring as anticipated. Section 4.0 (Summary) states, "The most important indicator for the MNA remedy performing as predicted is an evaluation of the long-term concentration trends of many monitoring wells and an interpolation of the data showing decrease in plume size over time. Although the overall plume size has minimally changed since the completion of the source zone RA 15 years ago, many core concentrations (higher concentration areas of the plume) continue to decline." However, the decline in core concentrations could be attributed to the increase of water levels and indicate enhanced dilution or migration of contaminants is occurring and masking results of MNA. As such, future EMRs should evaluate whether MNA or dilution/hydraulic movement has a greater effect on the resultant contaminant concentrations. *Please indicate that further investigations to assess the effectiveness of MNA are warranted and discuss contingency RA's that may be implemented if MNA is not effective.*

Response: Agree/Clarification

As discussed in section 2.2.2.2, PCE and TCE Transmissive Zone, increased water elevations show a possible correlation with increases in contaminant levels at wells near the source area as residual contamination trapped in the vadose zone is released to groundwater. In 2023, all monitoring wells were analyzed using GSI Mann-Kendall trend analysis for data post-ERH/SVE and updated in 2024 to include 2023 data if the data indicated changes to those trends. Results of this analysis show that most of the monitoring wells (85%) show a declining or steady trend in PCE and TCE over the past 13 years. Figure 32 graphically summarizes these results and by aquifer. Both the 2017 model update and the 2024 model update show groundwater cleanup timeframes (~100 years) within the range of the original 2002 model (~50 – 130 years) on which MNA was chosen as the remedial action. The 2024 updated model results will be discussed in the June 2025 CMP Pits EMR, and the full modeling report will be supplied as an appendix to the EMR.

As stated in the EMR, MNA processes occurring at CMP Pits include advection and dispersion and not enhanced dilution. SRS acknowledges that biodegradation is likely occurring near Pen Branch and is conducting additional investigations to provide data to further understand these processes at CMP Pits, particularly in the wetland area. This includes the installation of 11 additional CMP-PB-series shallow wells located beneath in the Pen Branch stream and

permanent stream flow gauges in Pen Branch in 2024. Additional groundwater plume assessments will be conducted by an independent organization and future microbial studies are planned to be conducted in the wetland area. Results from these new stations, plume assessments, and studies will be supplied in subsequent EMRs as available. Also see response to EPA general comment #5. The effectiveness of the MNA remedy will continue to be monitored and reported in the CMP Pits OU EMR annual reports and in the *Five-Year Remedy Review for Savannah River Operable Units with Groundwater Remedies*. Recommendations for additional remedial action, if needed, are evaluated in the five-year remedy reviews with Core Team discussions as appropriate.

No changes to the July 2024 EMR are proposed.

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5. It is unclear whether the upcoming 2025 CMP Pits EMR will also provide a cost analysis in the evaluation of additional actions to address the residual source contamination and improve cleanup times. The EMR states, "SRS [Savannah River Site] is using the 2021 data soil sampling data, as well as recent groundwater data, to update the source term (and plumes) in the 2017 model to simulate if an additional action to reduce the residual source would improve cleanup timeframes," however, is it not clear whether a cost analysis will be included in this evaluation. The cost analysis associated with the reduced cleanup timeframes, including capitol and operational costs of contingency actions, should be compared to the costs to perform long-term monitoring (LTM), including five year reviews (FYRs) for the next approximately 100 years. *Please revise the EMR to indicate that evaluation of additional cleanup actions and associated cost analysis will be prepared, along with the model update, and provided in the 2025 CMP Pits EMR.*

Response: Clarification

SRS is currently updating the 2017 groundwater model with additional source term data collected in 2021 and groundwater data. The outcome of this model update will determine changes, if any, to plume movement and impact to Pen Branch and if an additional action would improve cleanup timeframes. The updated model results will be discussed in the June 2025 CMP Pits Effectiveness Monitoring Report. SRS recommends that further discussion regarding the need for and scope of alternative remedial scenarios will be held with the Core Team subsequent to submittal and review of the June 2025 EMR, which will include the model results. No changes to the July 2024 EMR are proposed.

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6. The text indicates that MNA is not likely occurring outside of the wetland; however, a discussion on how this was evaluated utilizing the geochemical parameter well data is missing. The geochemical parameter data presented in Table 3 (CMP Pits OU Annual MNA Results, April 2023 through March 2024) should be used to evaluate what may be inhibiting natural attenuation at the site. *Please provide a detailed discussion on the factors contributing to reduced MNA potential.*

Response: Agree/Clarification

The main difference between the results of the main plume aquifer and wetlands well data is the higher abundance of VOC degradation products (cis-1,2-DCE and VC) detected in the wetlands wells and SCSU sample data. The installation of the additional CMP-PB-series shallow wells located beneath in the Pen Branch stream in 2024 and permanent stream flow gauges will allow for further assessment of the wetland area and groundwater/surface water conditions. Additional descriptions on the differing geochemical parameters and analytical results seen between the main plume aquifer conditions and what is observed in the wetland area will be included in future CMP Pits EMRs. No changes to the July 2024 EMR are proposed.

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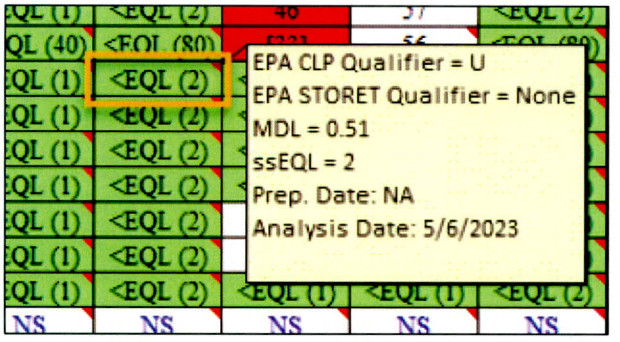
7. Table 3 (CMP Pits OU Annual MNA Results, April 2023 through March 2024) indicates the detection limit for vinyl chloride is frequently greater than the maximum contaminant level (MCL) of two micrograms per liter (µg/L); however, the EMR does not discuss the corresponding impact on data or recommend a resolution. It is noted that SRS is looking for a laboratory to achieve lower 1,4-dioxane detection limits, but VC is not mentioned. *Please revise the EMR to discuss the impact of the elevated VC detection limit and any impact on data and include VC in the recommendation to find a lab to achieve the lowest possible detection limit.*

Response: Clarification

A total of 134 sample results for vinyl chloride are presented in Table 3. The majority (125) of these results had detection limits at or below 2 µg/L. Nine results had detection limits above the 2 µg/L MCL. These nine results correlated to samples that also included high concentration of other volatile organic compounds (VOCs) (i.e., tetrachloroethylene and/or trichloroethylene). Because of the higher VOC concentrations, those samples were diluted, thereby resulting in higher detection limits for those samples. The table below summarizes the method detection limits (MDL), sample quantification limits (EQL), and dilution factors for the vinyl chloride results in shown on Table 3 of the EMR. The nine results greater than the MDL of 2 ug/L all are associated with diluted samples.

Result Shown	Count	MDL	EQL	Dilution Factor
[1.1]	1	0.51	2	1
<EQL(2)	116	0.51	2	1
<EQL(4)	7	1	4	2
<EQL(8)	1	2	8	4
<EQL(10)	3	2.5	10	5
<EQL(20)	2	5.1	20	10
<EQL(40)	3	10	40	20
<EQL(80)	1	20	80	40

Additionally, the result displayed in Table 3 for non-detect results conservatively shows the concentration as less than the EQL, not the MDL. On the Excel version of Table 3 provided with the EMR submittal, notes are provided within the cells (the pop-up that displays when hovering over a result cell) that identifies the MDL and EQL. Below is an example of the pop-up note when hovering over the cell on the Excel version of Table 3.



SRS has been working with the labs to run analyses for the other VOC constituents without dilution to obtain results for those analytes with MDLs at levels below MCLs, if capable. No changes to the July 2024 EMR are proposed.

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SPECIFIC COMMENTS

1. **Section 3.0, Future Additional Sampling and Efforts, Page 27 of 114:** Well cluster CMP 15B/A should be included in the additional wells proposed for anion/cation sampling. The text states, "Additional anion/cation samples are proposed to be collected at a total of 23 additional wells, including clusters with wells in multiple aquifer zones, wells downgradient towards Pen Branch, and wells on the north side of Pen Branch (Figure 35);" however, since the CMP 15A/B well cluster is

used to construct Cross-Section B-B', anion/cation sampling should also be proposed for this well. *Please revise the EMR to also propose well cluster CMP 15B/A for cation/anion sampling in 2025.*

Response: Agree

SRS will include cation/anion analyses at wells CMP 15A and CMP 15B during the 4Q2024 sampling event along with the other cation/anion sampling. Results will be included in the June 2025 EMR. No changes to the July 2024 EMR are proposed.

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2. **Section 3.0, Future Additional Sampling and Efforts, Page 27 of 114:** The text indicates the 12 new permanent shallow monitoring wells in the Pen Branch stream will be sampled for VOCs and 1,4-dioxane semiannually for at least the first two years; however, any new groundwater monitoring well should be analyzed for all site contaminants (e.g., including lindane) during the initial sampling. *Please revise the text to recommend all analyses at the proposed new wells during initial sampling.*

   Response: Agree

   SRS agrees that the new wells should be sampled for all site contaminants for the initial sampling. SRS did include lindane in the sampling after the wells were installed. Results from these wells for all site contaminants will be included in the June 2025 EMR. No changes to the July 2024 EMR are proposed.

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3. **Figure 22, Cross Section B – B' at the CMP Pits OU Area with 2023 1,4-Dioxane Plume and Results, Page 75 of 114:** It is unclear why CMP 32B is not sampled for 1,4-dioxane. Based on the plume configuration, sampling of this location may provide valuable information for vertical delineation of the plume in the Lower Aquifer Zone (LAZ). *Please revise the EMR to recommend CMP 32B for 1,4-dioxane sampling..*

   Response: Agree

   SRS agrees to include 1,4-dioxane analyses at well CMP 32B. Sampling for 1,4-dioxane was added to the 4Q2024 sampling event. These results will be included in the June 2025 EMR. Also, 4Q sampling for 1,4-dioxane at CMP 32B will permanently be added to Table 1, *CMP Pits OU MNA Monitoring Network* in the June 2025 EMR. No changes to the July 2024 EMR are proposed.

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4. **Figure 22, Cross Section B – B' at the CMP Pits OU Area with 2023 1,4-Dioxane Plume and Results, Page 75 of 114:** Based on the cross-section, CMP 8A exceeds the 1,4-dioxane Regional Screening Level (RSL) of 0.46 µg/L in the Gordon Aquifer at 4.7 µg/L; however, it is unclear what additional efforts are being made to delineate this area. *Please revise the EMR to discuss delineation of 1,4-dioxane exceedance in the Gordon Aquifer at CMP 8A.*

Response: Clarification

Sampling for 1,4-dioxane has occurred at least annually at well CMP 8A since 2015. Results have been non-detect except for the EPA8260DSIM method in May 2023. The sample analyzed with lower detection limits with method EPA522 did not detect 1,4-dioxane in the May 2023 sample. Subsequent sampling in 4Q2023 and 2Q2024 were all non-detect for 1,4-dioxane. SRS will continue to monitor for 1,4-dioxane at the Gordon Aquifer wells, including CMP 8A, but has no plans for additional characterization efforts. No changes to the July 2024 EMR are proposed.

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5. **Figure 23, Cross Section C-C' at the CMP Pits OU Area with 2023 1,4-Dioxane Plume and Results, Page 77 of 114:** It is unclear why EPA Method 8260D detection limit for 1,4-dioxane is listed at CMP 064B, when all other monitoring locations use the EPA Method 522 detection limit of 0.2 µg/L (see Table 3, CMP Pits OU annual MNA Results, April 2023 through March 2024). *Please revise the figure to use consistent method detection limits.*

Response: Agree/Clarification

The label for 1,4-dioxane at well CMP064B in both Figure 23, *Cross Section C-C' at the CMP Pits OU Area with 2023 1,4-Dioxane Plume and Results* and also Figure 20, *2023 1,4-Dioxane Plume and Groundwater Results for the LAZ and GA* incorrectly listed the result with the EPA method 8260DSIM which has the sample quantitation limit (EQL) of 3 µg/L. The figure should have used the result from the EPA522 method, which was also non-detect with an EQL of 0.2 µg/L. Using the correct result on the figure would not change the plume delineation. No changes to the July 2024 EMR are proposed.

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6. **Figure 24, 2023 Lindane Plume and Groundwater Results for the TZ and MAZ, Page 79 of 114:** It is unclear why CMP 13D is not sampled for lindane. Based on the time-series plot in Appendix B for CMP 35D, lindane has been increasing since 2013 and CMP 13D is northwest and potentially downgradient of CMP 35D; therefore, lindane should be proposed for sampling to bound the plume. *Please revise the EMR to recommend CMP 13D be sampled in future events for lindane.*

Response: Agree/Clarification

SRS agrees to include lindane analyses at well CMP 13D. Sampling for lindane was added to the 4Q2024 sampling event. These results will be included in the June 2025 EMR. Also, 2Q sampling for lindane at CMP 13D will permanently be added to Table 1, *CMP Pits OU MNA Monitoring Network* in the June 2025 EMR. No changes to the July 2024 EMR are proposed.

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Table CR-EPA-1. 4Q23 CMP Pits PFAS Results (ng/L) (ppt)

Station	Method	11CL-PF3OUDS	3:3FTCA	4:2 FTS	5:3FTCA	6:2 FTS	7:3FTCA	8:2 FTS
USEPA MCL/RSL (ng/L)		--	--	--	--	--	--	--
CMP-011-A	1633	ND	ND	ND	ND	ND	ND	ND
CMP-011-A (Split)	533	ND	--	ND	--	ND	--	ND
CMP-035-D	1633	ND	ND	ND	ND	ND	ND	ND

Station	Method	9CL-PF3ONS	ADONA	GENX	MEFOSA	NEtFOSA	NETFOSAA	NEtFOSE
USEPA MCL/RSL (ng/L)		--	--	10	--	--	--	--
CMP-011-A	1633	ND	ND	ND	ND	ND	ND	ND
CMP-011-A (Split)	533	ND	ND	ND	--	--	--	--
CMP-035-D	1633	ND	ND	ND	ND	ND	ND	ND

Station	Method	NFDHA	NMEFOSAA	NMeFOSE	PFBA	PFBS	PFDA	PFDoA
USEPA MCL/RSL (ng/L)		--	--	--	18,000	6,000	--	1,000
CMP-011-A	1633	ND	ND	ND	ND	ND	ND	ND
CMP-011-A (Split)	533	ND	--	--	ND	ND	ND	ND
CMP-035-D	1633	ND	ND	ND	[0.77]	[0.13]	ND	ND

Station	Method	PFDoS	PFDS	PFEESA	PFHpA	PFHPS	PFHxA	PFHxS
USEPA MCL/RSL (ng/L)		--	--	--	--	--	9,900	10
CMP-011-A	1633	ND	ND	ND	ND	ND	ND	ND
CMP-011-A (Split)	533	--	--	--	ND	ND	ND	ND
CMP-035-D	1633	ND	ND	ND	ND	ND	[0.5]	ND

Station	Method	PFMBA	PFMPA	PFNA	PFNS	PFOA	PFOS	PFOSA
USEPA MCL/RSL (ng/L)		--	--	10	--	4	4	--
CMP-011-A	1633	ND	ND	ND	ND	ND	ND	ND
CMP-011-A (Split)	533	ND	ND	ND	--	ND	ND	--
CMP-035-D	1633	ND	[0.72]	ND	ND	ND	[0.29]	ND

Station	Method	PFPeA	PFPES	PFTA	PFTrDA	PFUnA
USEPA MCL/RSL (ng/L)		--	--	20,000	--	6,000
CMP-011-A	1633	ND	ND	ND	ND	ND
CMP-011-A (Split)	533	ND	ND	--	ND	ND
CMP-035-D	1633	ND	ND	ND	ND	ND

[##] - Estimated J-qualified result
ND - Not detected
-- analyte not included in method